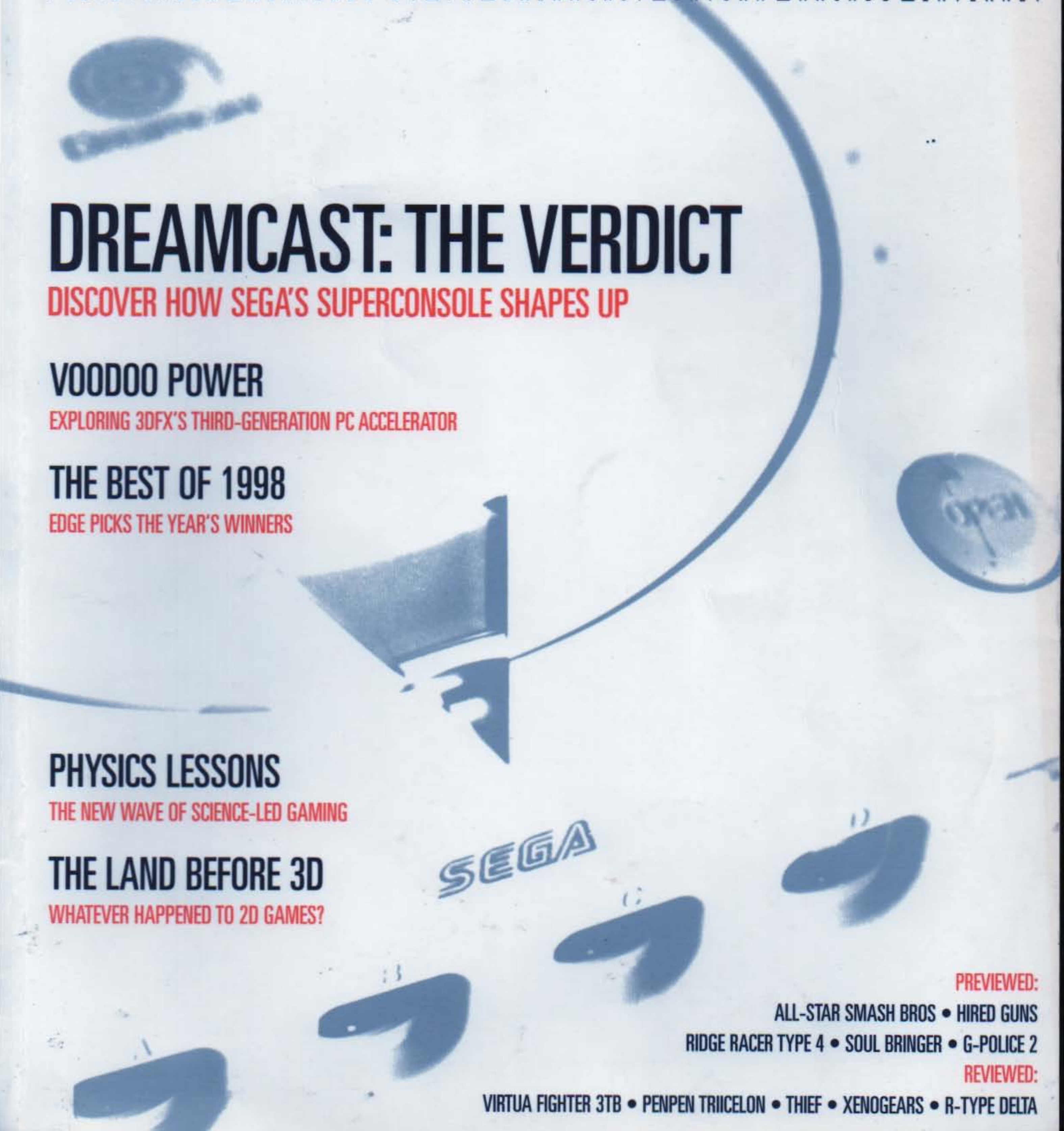
THE FUTURE OF INTERACTIVE ENTERTAINMENT
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# EDGE

PLAYSTATION ■ NINTENDO 64 ■ PC ■ DREAMCAST ■ SATURN ■ ARCADE ■ INTERNET




## DREAMCAST: THE VERDICT
DISCOVER HOW SEGA'S SUPERCONSOLE SHAPES UP

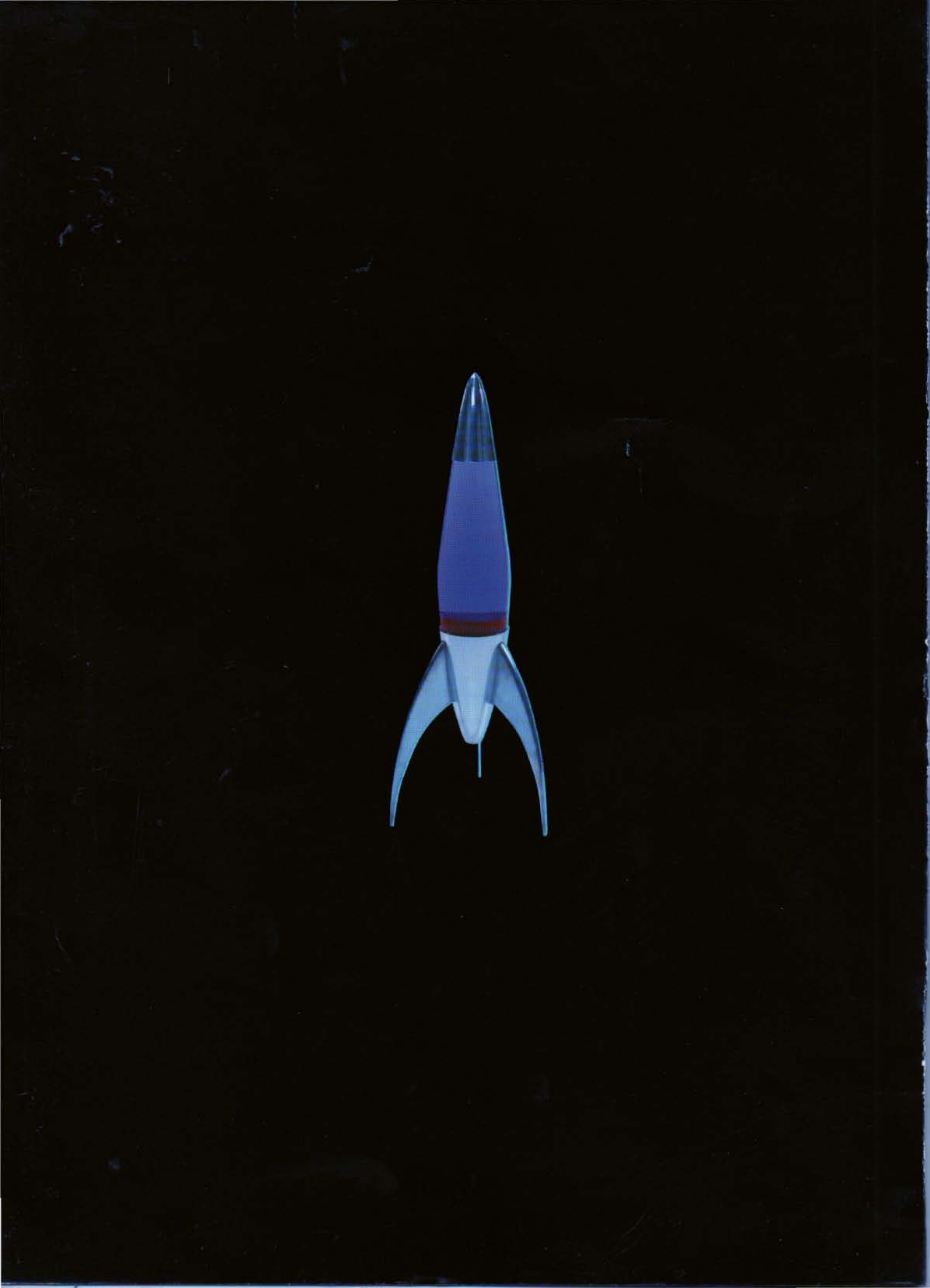
## VOODOO POWER
EXPLORING 3DFX'S THIRD-GENERATION PC ACCELERATOR

## THE BEST OF 1998
EDGE PICKS THE YEAR'S WINNERS

## PHYSICS LESSONS
THE NEW WAVE OF SCIENCE-LED GAMING

## THE LAND BEFORE 3D
WHATEVER HAPPENED TO 2D GAMES?

PREVIEWED:
ALL-STAR SMASH BROS • HIRED GUNS
RIDGE RACER TYPE 4 • SOUL BRINGER • G-POLICE 2
REVIEWED:
VIRTUA FIGHTER 3TB • PENPEN TRIICELON • THIEF • XENOGEARS • R-TYPE DELTA





**W**hen 11 individuals, with over 200 years of gaming experience between them, sat down to compile **Edge**'s Best of 1998 feature this month, it took the best part of an evening just to draw up a preliminary short list. Some awards were easy to pin down (votes for *Legend of Zelda: Ocarina of Time* as game of the year were unanimous) while others, particularly the hardware innovation category, proved rather more challenging. Could Dreamcast *really* waltz in and scoop the award? You'll find the answer on p77.

It's certainly difficult to ignore Sega's new machine at the moment. If its launch failed to attract the same levels of frenzied attention that engulfed the Japanese launch of the PlayStation and Saturn in 1994, it's nevertheless one of the most attractive pieces of electronic entertainment equipment that **Edge** has ever tinkered with.

What has been a revelation, however, is the reception the machine has received outside of **Edge**. Whenever new gaming kit arrives here, some odd form of underground communication network kicks in, culminating in the **Edge** office becoming swamped by heaving masses of eager gameheads within minutes. Unlike the N64 with *Super Mario 64* or the PlayStation with *Ridge Racer*, however, *Virtua Fighter 3tb* appeared incapable of captivating this audience for more than about half an hour. If this was the effect it had on hardcore gamers, what can Sega hope to achieve with the massmarket it so desperately seeks to penetrate?

The quality of AM2's *Virtua Fighter 3tb* conversion is not in doubt. But, to an increasing number of gamers, beat 'em ups are yesterday's news. Roll on *Sonic Adventure*.

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Voted magazine of the year
**1997 InDin awards**

Printed in the UK


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At the end of a triumphant year in videogaming, Edge's awards honour 1998's brightest stars

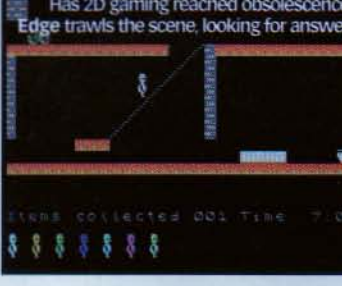
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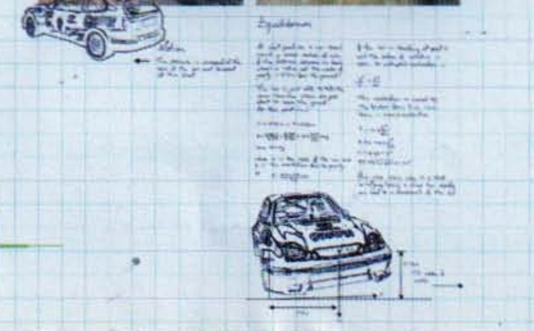


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The world's most honest, accurate videogame reviews

VIRTUA FIGHTER 3TB




PENPEN TRICELON




THIEF: THE DARK PROJECT




HERETIC II




R-TYPE DELTA




TOP GEAR OVERDRIVE





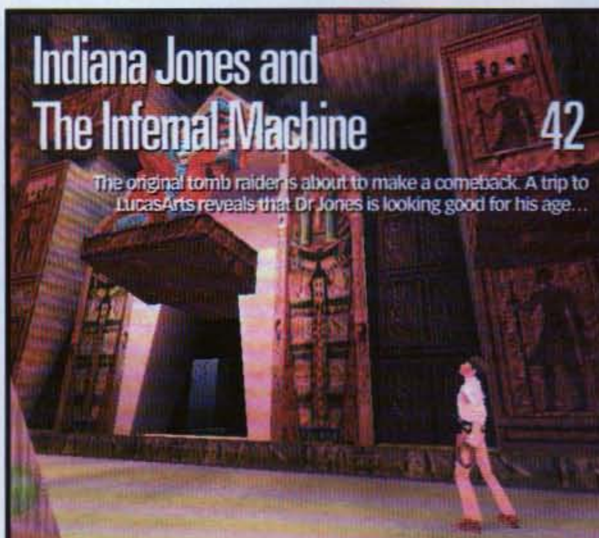
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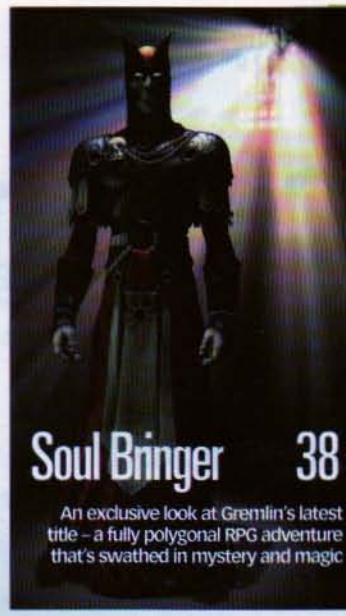
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# Cutting Edge

Cutting Edge Cutting Edge Cutting Edge Cutting Edge Cutting Edge Cutting Edge Cutting Edge

The latest news from the world of interactive entertainment

## DREAMCAST: DAY ONE

**Edge** was in Tokyo for the official launch of Sega's next-generation superconsole





**Happy days? Sega president Shoichiro Irimajiri (centre) exemplified his down-to-earth style of management by attending Dreamcast's first day on sale. Special-edition boxes featuring Yukawa Hidekazu (left and opposite) and his popular commercial exploits were printed for the first batch of machines**





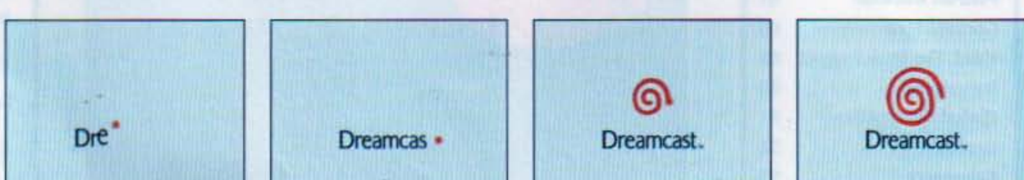
**Unable to deliver the full 500,000 console packs it intended, Sega instead managed to gather a claimed 150,000, including 80,000 pre-ordered sales**

It's 8.30am on November 27, 1998, Akihabara district, Tokyo. Four years and five days after the Saturn's sell-out release into the city's stores, leading game vendor Laox opens its doors to admit the queue of customers outside, some of whom having waited all night to buy Sega's new machine. Under a barrage of camera flashes, they file into the shop and hand over ¥29,800 (£150) for the object of their desire: the 128bit console, Dreamcast.

At 9am, Sega manager-turned-advertising-star Yukawa Hidekazu makes a personal appearance outside Laox rival Sofmap to bolster the new console's launch. Wearing a traditional Japanese festival jacket in the same burning orange colour as the Dreamcast logo, he poses by the lines of customers for the benefit of onlooking journalists. Hidekazu-san is shortly joined by Sega Enterprises charismatic president Shoichiro Irimajiri, who takes his turn in front of the cameras. Then Sofmap allows the eager punters waiting outside to make their purchases at around 9.15am. A little later, Laox staff begin subtly coaxing those queuing outside their competitor's shops to change allegiances – with loud-hailers.

### Purchasing power

By 10am a second wave of Dreamcast buyers arrives, and Sega's admittance to hardware shortages keeps interest high. Among those waiting are foreign buyers,




**Once your virginal Dreamcast has been torn from its packaging and hurriedly connected to the television (why did they have to make S-Video sockets so fiddly?), this is the first screen to appear. And don't ask which comes first...**













**Sega estimates that over 100 eager gamers waited overnight in Akihabara to ensure that they secured themselves one of the first few Dreamcast units**

**TV advertising star Yukawa Hidekazu was clearly excited to be at the public launch**

their get-rich-quick schemes soon to be foiled by a one-customer, one-purchase policy operating in all stores. Meanwhile, Japanese wholesalers are selling Dreamcasts to small western importers at ¥85,000 (£425) per unit, which inflated to prices of around £1,000 once the consoles reached London stores.

By the end of the day Sofmap has sold all 1,000 of its allocated consoles, a tale repeated at each of the 5,000 outlets Sega had sanctioned. While limited stocks prevented the Saturn fever that spiralled day-one sales to 200,000 consoles, Dreamcast retailers have sold out of all 150,000 available packs (including one which now resides in the **Edge** office). And in a situation eerily reminiscent of the Saturn release, a *Virtua Fighter* title proves the only title worth investing in.





**Irimajiri-san (top right) looks on stoically as shop staff use megaphones to attract customers. 'Others' were on hand to claim PlayStation's demise**

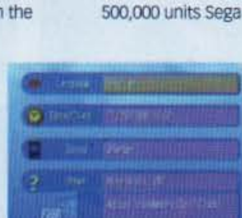
## The aftermath

A change of heart part way through development has returned the company logo, and that of Windows CE, to the console's casing. However, Sega's recent advertising has focused entirely on the Dreamcast brand, although the status of *Virtua Fighter* – and the forthcoming *Sega Rally 2* (due January 14) – means that the machine will be known for its arcade conversions, at least in the short-term.

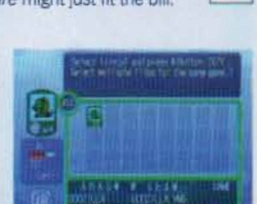
As reported last issue, NEC's problems manufacturing the PowerVR 2DC chipset for Dreamcast severely limited the number of consoles Sega could have available for day one in Japan. While 150,000 sales is an impressive figure, it falls far short of the intended 500,000 units Sega wanted to have in retail. Half a million units remains Dreamcast's sales target for the end of '98, and double that by March '99.

While the initial Dreamcast range at launch was adequate, with *Virtua Fighter 3tb*, *PenPen Trilcelon*, *Godzilla Generations* and *July*, plus the excellent arcade stick and an S-Video cable, Sega's new console is screaming out for software to test its abilities. Released by the time you read this, on December 23, the much anticpated *Sonic Adventure* might just fit the bill.









**If the machine is started minus a GD-ROM disc, this options menu appears, allowing you to set the language, time and date. As with PlayStation, a music CD player is included along with a comprehensive memory card management system**



## SUPERCONSOLE: PRE-LAUNCH

Prior to the arrival of Dreamcast, **Edge** met Sega's consumer division marketing manager **Kunihisa Ueno**, the man charged with delivering the console to Japan's eager gameplayers



Photography: **Hiroki Izumi**

**What is your target for Dreamcast hardware sales in 1998?**

**Kunihisa Ueno:** This year, roughly 500,000 units. And this fiscal year, which ends in March '99, we plan to sell one million units.

**Edge: Will you be able to fulfill demand for 500,000 units by the end of December?**

**KU:** Maybe. Not yet, but that will be clarified soon.

**Edge: Sega seems to have laid the blame for the Dreamcast shortages pretty squarely at NEC's feet. Why?**

**KU:** We needed not only potential customers but also our retailers to understand what happened. So we talked with NEC's people and we decided to announce the problem of short supply, and NEC agreed to announce their name. If we didn't say anything, the customers would suspect that Dreamcast is having some major problems.

**Edge: Has Sega altered its distribution system since the days of Saturn?**

**KU:** Yes. Starting with the Saturn, we established a company called Sega United in '94 or '95. It was still a wholesaling system – under United there were 18 wholesalers for the Saturn period. Cost-wise and leadtime-wise it was not as efficient as Sony's distribution. So we decided to totally restructure our distribution, from 18 to two wholesalers.

**Edge: Obviously the launch of every console needs retail backing. How have you gone about this?**

**KU:** For the launch, we had announced five titles, but we had to change our program. *Sega Rally 2* is postponed until January 14 due to adjustments being made to the title. So we have four titles for the launch of Dreamcast, with *Sonic Adventure* before the end of the year.

**Edge: How different is the Dreamcast launch to the Saturn's?**

**KU:** At that time, the strongest title was *Virtua Fighter*, and it was the only one which helped the volume of hardware sales. This time, from the very beginning, we wanted a strong line-up. Saturn was known for having a lot of arcade ports, you know that. We wanted to avoid such a stigma for Dreamcast; we have *Sonic*, which is a very home-oriented title, plus the Internet functions.

**Edge: How many machines have been pre-ordered?**

**KU:** On the first day of the campaign, October 20, we took 50,000 orders.

**"FROM THE VERY BEGINNING, WE WANTED A STRONG LINE-UP. SATURN WAS KNOWN FOR HAVING A LOT OF ARCADE PORTS. WE WANTED TO AVOID SUCH A STIGMA FOR DREAMCAST"**

**Edge: How big is Dreamcast's promotional budget compared to that of the Saturn?**

**KU:** Three times bigger [laughs].

**Edge: Are you worried about the announcement of PlayStation 2?**

**KU:** In terms of our stock price, no, I don't think so. But in terms of the competition in the market... we've already assumed the possibility of PlayStation 2 being announced. Within a year, I think, probably in the spring.

### PROJECT BERKELEY: ARCADE QUALITY FOR DREAMCAST

Yu Suzuki's track record as an arcade game producer is unsurpassed. *Space Harrier, OutRun, Virtua Racing* and the *Virtua Fighter* series are all products of his unrivalled ability to utilise the latest hardware to its fullest extent.

Suzuki-san (opposite) is creating *Project Berkeley* for Dreamcast, a game previously known as *Virtua Fighter RPG*. His coin-op titles have delivered the most complete experience in the shortest time. Whether that can translate into a longer game will have been revealed in Tokyo on December 20. Expect more details next issue.












# VOODOO TO THE POWER OF 3

3Dfx raises the stakes in the PC accelerator card market via AGP 2x

Barely 12 months since the arrival of 3Dfx's benchmark Voodoo2 chipset, the California-based company has announced the third iteration of its PC graphics accelerator. Unsurprisingly entitled Voodoo3, the new chipset utilises Intel's AGP graphics port on the PC motherboard to achieve a rather startling peak performance of seven million polygons per second.

Voodoo3 will be supplied in two flavours: 2000 and 3000. Both are combined 2D and 3D solutions like 3Dfx's effectively defunct Banshee card. The 3000 is a higher-performance, higher-priced design centred around a 366MHz 128bit processor, while the 2000 is the 'budget' version, using a 250MHz chip, aimed at the PC manufacturing (OEM) market. Both use AGP 2x technology, with the 2000 series able to draw up to 4.5 million triangles and the 3000 capable of the skyscraper seven million figure. Resolutions up to 2,048x1,536 are supported by both, as is full-scene antialiasing, 30fps DVD video playback and digital video output for PAL and NTSC televisions.

However impressive the specifications are, **Edge** has doubts as to whether PC owners are ready to pay for yet another graphics card. Voodoo2, in the UK at least, has only recently fallen to an affordable price level, and for the mainstream consumer could be viewed as an expensive luxury. **Tony Tamasi**, 3Dfx's graphics hardware product manager, revealed a somewhat bullish approach to such concerns.

**"VOODOO2 WAS IN NO WAY A STOP-GAP.** IT WAS INTRODUCED IN NOVEMBER 1997 – **IT HAS TAKEN SIGNIFICANT EFFORT TO DELIVER THIS KIND OF 3D"**

"Our goal is to obsolete our own products as rapidly as possible," he stated, "to continue to deliver the most compelling, highest performance graphics solution in the industry. If 3Dfx can always be the first company to be 'the true Voodoo killer' we're doing our job." Tamasi was defensive when quizzed about the lifespan of 3Dfx's last chipset. "Voodoo2 was in no way a stop-gap product," he claimed. "Voodoo2 was introduced in November 1997, more than one year ago – it has taken significant effort, and advances in silicon technology, to deliver this kind of 3D performance at aggressive price points."

When asked whether the recent success of 2D games such as Eidos' *Commandos: Behind Enemy Lines* was due to a lack of interest from mainstream consumers, Tamasi replied that, "While it's true that many games today do not require hardware acceleration or substantial hardware platforms, the trend is towards ever-increasing levels of detail, realism, and special effects across the board." He went on to confidently add that, "What we strive to deliver is a platform that is without limits for game developers."

"By offering seven million triangles per second and more fill-rate power than a Voodoo2 SLI [Scan Line Interleaved] on a single chip, 3Dfx is raising the bar for game developers in terms of what they can expect the new baseline for 3D performance to be," Tamasi claimed. In truth, it's the implementation of AGP support which has allowed 3Dfx elevate those expectations, as Tamasi tacitly admitted. "By implementing AGP 2x," he explained, "Voodoo3 now has 512Mb/sec of bus bandwidth with which to deliver enormously high triangle rates, and very high-speed texture traffic."

Since nVIDIA's Riva TNT chipset turned up the heat in the accelerator market, many industry observers have been waiting to see what 3Dfx's response would be. Judging by the 3000 series' specs, it seems that graphics card technology is locked onto an exponential increasing performance curve. With new contenders entering the fray every week (see p11), it's safe to say that Voodoo has won this round – but the fight goes on.

## Voodoo3 3000 specifications

**General features**

- Fully integrated 128bit VGA/2D/3D/video accelerator
- 2x AGP with sidebands
- Fully software-compatible with 3Dfx Voodoo Banshee
- Floating-point Z buffer (W buffer)
- Acceleration of software MPEG2 CODECs
- Digital video output for NTSC and PAL TV-out support
- 350MHz RAMDAC 2,048X1,536, 75Hz mode support
- 4-16MB SGRAM and 16MB SDRAM 128bit-wide frame buffer

**2D acceleration**

- 366 MHz single-cycle 128bit Windows GUI acceleration
- SGRAM colour expansion and single-cycle block writes
- Accelerated 8, 16, 24 (packed), 32bit modes

**3D acceleration**

- Dual texture units: 2 textures per pixel per clock
- Full hardware setup of triangle parameters
- Support for multi-triangle strips and fans
- 16bit integer and floating-point Z-buffering with biasing
- Transparency and chroma-key with dedicated colour mask
- Alpha blending on source and destination pixels
- Sub-pixel and sub-texel correction to 0.4x0.4 resolution
- 24bit colour dithering to native 16bit RGB
- Per-pixel atmospheric fog with programmable fog zones
- Full-scene polygon-based edge antialiasing
- Dynamic environment mapping
- Perspective-correct (true divide-per-pixel) 3D texture mapping and Gouraud shading
- Single-cycle bump-mapping
- Single-cycle trilinear mip-mapping
- Anisotropic filtering
- True per-pixel, LOD MIP mapping with biasing and clamping
- RGB modulation combines textures and shaded pixels
- Texture compositing for multi-texture special effects
- Support for 14 texture map formats
- 8bit palletised textures with full bilinear filtering
- Texture compression through narrow-channel YAB format

**Host interface**

- High-performance AGP 2x interface including sideband addressing
- 33MHz and 66MHz PCI v2.1 bus interface
- FIFO optimised for high-speed bursting of geometry and texture data
- Optimised for Pentium II I/O architecture: out-of-order instruction execution in hardware
- Bi-endian byte-ordering support

**Memory system**

- 4, 8, or 16Mb of 183+MHz SGRAM or 16Mb SDRAM
- 0.25 micron, five-layer metal CMOS technology

**Software**

- Full BIOS and driver compatibility with Voodoo Banshee
- Windows 95, Windows 98, Windows NT4.0 device drivers
- Extensive 3D API support: Glide 2.X and 3.X, OpenGL ICD, Microsoft D3D
- MPEG2 decode
- Software DVD support

# **ISDA DECLARES WAR** ON ROM SITES

Is this the beginning of the end for 'mainstream' emulation?

**Edge** would imagine that there are few current readers unfamiliar with www.davesclassics.com. A reliable, up-to-date source of emulators and ROM images – from MAME to, say, the Atari ST – Dave's page recently celebrated its 19th million hit since its inaugural appearance last year.

Between Monday November 9 and Thursday November 12, attempts to visit www.davesclassics.com were met with a curious error message. On Friday November 13, the reason for this puzzling 'down time' became clear. Emboldened by their success in limiting the supply of SNES and Mega Drive roms – now very much an 'underground' scene – the ISDA 'closed' www.davesclassics.com. Being a valued affiliate of United Gamers Online (www.ugo.com), UGO president "stepped up to bat", as Dave puts it, for his site's future. In return for removing every ROM image from the pages, Dave's Videogame Classics was allowed to return on Friday November 13.

In the two weeks since that point (and at the time of going to press), the site has begun the slow, but patient, process of rebuilding its once-unrivalled collection of downloads. Although its actual emulators were unaffected by the ISDA's intervention, Dave's Videogame Classics was forced to remove even ROMs widely regarded to be 'public domain' software, such as Amstrad CPC and Spectrum files. With permission from the site's ISP – which, in the event of legal action, would share a degree of responsibility – 'freeware' ROMs made a return on Wednesday December 3, with the reintroduction of the Vectrex archive.







**With over 19 million 'hits' since last year, Dave's Video Game Classics is a successful site. Will it be as popular without its prodigious ROM content? And will MAME and its ilk suffer as a result? Emulation is on its knees**

## Devastating

The ISDA's militant stance – although justifiable in law – is a disastrous blow for the emulator scene. As fans of SNES and Mega Drive emulators attest, finding ROMs for either machine involves a patient, time-consuming search through many dead links and inoperable 'fan' sites. Without the 'free' availability of arcade ROMs, can MAME remain as popular as it is? And, without sites such as www.davesclassics.com providing 'easy' access to games, could those supporting the project lose interest? It's a disquieting thought.

On emu-oriented message boards and newsgroups, many enthusiasts are suggesting anonymous FTP sites as a solution. Web pages are difficult to regulate and oversee, but an FTP archive of MAME or, say, Neo Geo ROMs, could remain undetected by relevant authorities for a considerable timespan (and, in a both ironic and lamentable twist, by those searching for ROMs). **Edge** feels this is a backwards step for the emulator fraternity as a whole – a move sure to destroy its burgeoning, pseudo-mainstream appeal.

## Going underground

Without the convenience of well-known 'sources' for ROM images, the emulator scene will again become the preserve of hardcore retrogamers, a handful of coders and those well-versed in the art of locating obscure files on the Net. But, with the powerful arm of the ISDA guided by publishers fiercely guarding intellectual properties, how can emus be more than a niche concern? Your comments are welcome.




**The ISDA, has the unenviable task of clamping down on emulation deviants. www.davesclassics.com was obliged to remove all ROM images**

### Emus unite

The two most successful PlayStation emulators, *PS Emu Pro* and *PSYKE*, have joined forces. Having established a foundation named TAB – the acronym remains, at present, a mystery – the efforts of both teams are to combine in the attempt to expedite the creation of the 'perfect' PC PlayStation package.

Having championed both here last month, **Edge** is pleased to witness such practical thinking and forethought from the traditionally super-competitive emu-creating fraternity. Both packages, in their own right, have promised a great deal of progress within the next six months – *PS Emu Pro* now supports *Tekken 3*, albeit not perfectly – but the possibility that this pooling of talent might lead to an 'exact' PlayStation emu before too long still remains to be seen.

Places to visit:
www.davesclassics.com
www.classicgaming.com
www.emulation.net (Mac OS only)

# **NEC AND VIDEOLOGIC** POWER UP

Slightly lower specced but significantly cheaper than Voodoo3, is the PowerVR 250 set for success?

With the PowerVR 2DC-equipped Dreamcast now on sale, NEC and VideoLogic have announced that first samples of the related PC graphics card chipset are now in pre-production. Dubbed PowerVR 250, the processor is a combined 2D/3D solution which, judging by its specifications (see below) and claimed five million polygon performance, should rank as a worthy rival to 3Dfx's Voodoo3 (see p9).

When contacted by **Edge**, a spokesperson for VideoLogic also claimed that due to Voodoo's more complex circuitboard design and high-specification RAM requirements, PowerVR 250 would be significantly less expensive once manufactured for retail. Pricing for the lone 250 chip has not yet been set, while Voodoo3 2000 and 3000 are expected to sell for around $30 (£19) and $45 (£25) respectively.

NEC and VideoLogic are predicting that the PowerVR 250 will be produced in the first quarter this year, joining the PowerVR 2DC and its arcade relative used in Sega's Naomi board. Although the 250 stands every chance of success, given the volatile, fast-moving nature of the PC graphics card market, the 'bread-and-butter' business that PowerVR has secured with Sega should prove invaluable over the coming months.




**Another day, another new PC graphics chip. Can the new PowerVR right past mistakes?**

## POWERVR 250 SPECS

**2D engine**
- Full ROP, text and line primitives
- MPEG2 decode assist
- Integrated 230MHz DAC (1,600x1,200@85Hz)
- Multiple video windows

**3D engine**
- Tile-based reduced bandwidth rendering engine
- 32bit floating-point Z-buffering
- Up to five million polygons/sec
- Fill rate between 200-500M pixels/sec
- Full polygon setup engine
- Bilinear, trilinear and anisotropic texturing plus bump-mapping
- True colour 32bpp pipeline
- Translucency sorting
- Image super-sampling/scene anti-aliasing
- Per pixel loadable table fog
- Specular highlights with offset colours
- Multitexturing support
- D3D and OpenGL blend modes
- Environment mapping

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- NTSC/PAL support
- Interfaces to industry standard TV and flat-panel displays
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# **N64 SAVIOUR** GATHERS MOMENTUM

Nintendo's new *Zelda* instalment sells a million




**Edge is not in the least surprised to see that *Zelda* is outstripping all software sales expectations worldwide**

It had to happen. After years of speculation and hundreds of teaser screenshots climaxing in comprehensive exaltation from the videogaming world (see p70), Nintendo's *Legend of Zelda: Ocarina of Time* is being snapped up by gamers in vast quantities. First week sales in Japan have exceeded the 316,00 of Konami's *Metal Gear Solid*, reaching a reported 386,234 copies, and as expected *Zelda* is helping to drive up the N64's user base in Japan.

The story in America is even more startling, with pre-orders for *Ocarina of Time* reaching a Dreamcast-dwarfing 325,000 copies. As **Edge** went to press, unconfirmed first-week sales in the US were thought to be in the region of one million copies.

Nintendo's UK representative, THE Games, released the game here on December 11 with an initial 250,000 units which are to be followed by 100,000 more in the New Year. By the end of January, THE aims to have sold a whopping 250,000 copies of *Zelda* to the UK's 1.3 million N64 owners.

## CUTTINGS

**Dreamcast software further delayed**
Sega's chronologically challenged game line-up for its new console has suffered more disturbances. *Blue Stinger* has moved from January to March, while *Bio-Hazard Code: Veronica* is unlikely to surface before the autumn. *Climax Landers* is also thought to be affected.

***Final Fantasy* date**
SquareSoft has confirmed that *FFVIII* will hit Japanese retail on February 11, priced at ¥7,800 (£39). The CG-packed game will arrive on four CDs.

**Die *Daikatana*?**
Eight members of the ION Storm team responsible for developing John Romero's *Daikatana* have quit the company to set up their own studio. Publisher GoD has already signed the newborn Bloodshot Entertainment.

**Sega of Europe chooses new leader**
With Dreamcast's western launch now nine months away, a new European head has been selected to represent Sega. Jean-Francois Cecillion's past experience includes a stint as head of EMI. He joins new marketing manager Giles Thomas, formerly of MTV.

**Virgin uncertainty ends**
After months of speculation, previous Virgin Interactive owner Viacom has sold the company to a management team led by Tim Chaney. A sign of the firm's renaissance is the return of Archer MacLean's *Jimmy White Cue Ball* from the Electronic Arts portfolio.

**Heavyweights sink *Virtua Fighter 3tb***
Part way through **Edge**'s review of *Virtua Fighter 3tb*, a major flaw in the game's physics engine came to light. When two of the heavier characters are located on the very edge of Shun's boat, it starts to gently dip, before 'sinking', leaving the fighters floating in mid-air, legs hilariously akimbo (see below). Sega's testers must have been tired…



# PRESCREEN

**EDGE PREMIERES INTERACTIVE ENTERTAINMENT'S FRESHEST FACES**

## 1999: The year of Nintendo?

**The PlayStation has been king of the hill for some time. But is showing its age**

Dreamcast is coming, PlayStation is everywhere and Nintendo is... where? Recent figures show that the installed base of N64 users (PlayStations are owned, Nintendos are used) is now 1.3 million in the UK and 4.5 million across Europe. Compared to Sony's latest claims of 3.5 million and 15 million respectively, Nintendo would appear to have an insurmountable deficit. Until, that is, you consider that the PlayStation had a 15-month headstart.

Just as the Mega Drive preceded the SNES into the market, giving it time to build the illusion of a dominating lead, so the PlayStation has 'conquered' the N64. Later in the machines' lifecycle, the SNES, through a combination of quality titles and technical superiority – among other factors – proved as popular as its rival. **Edge** doesn't believe that the N64 is about to suddenly break any sales records, although the new *Zelda* is clearly helping its case (see News). However, it's fair to say that the battle is far from over.

The arrival of Dreamcast has thrown the PlayStation's various technical inadequacies, particularly its polygon folding and lack of anti-aliasing, into sharp contrast. In comparison, the N64 seems more of a 'now' machine. The second and third generation Nintendo titles such as *Zelda*, *Banjo-Kazooie* and *F-Zero X* are clearly superior to anything Sony's machine can generate (in both gameplay and visual terms).

If the right software is delivered, 1999 could prove to be the year of the N64 in both Europe and Japan. The US Nintendo scene is far more healthy thanks to the heritage of the company and the massive popularity of the NES and SNES. However, NCL's store of games that can be simply suffixed with '64' has been almost exhausted; *Mario*, *Star Fox*, *Mario Kart*, *Yoshi's Island* and *F-Zero* have all been given reasonable updates. Even if fresh titles use Nintendo's most famous brands they will have to be presented in new ways. Which is exactly what NCL has done.

Following last issue's showing of *Mario Party* in Alphas, a sister game dubbed *All-Star Smash Brothers* is previewed on page 24. Featuring Link, Mario, Donkey Kong and a clutch of other NCL stars, and developed by *Kirby* creator HAL Laboratory, the game is a skewed take on the beat 'em up genre. If Nintendo returns to its roots and creates innovative and unusual games that people can't help falling in love with, then the PlayStation will have a tough time keeping up in '99.







**Now that Nintendo has updated virtually all of its past classics (except for *Metroid*...), including *Mario Kart* (left) and *Star Fox* (centre), fresh inspiration was needed. Cue *Smash Brothers* (right)**

## **Edge's** most wanted

*Zelda* landed – so where next?



**Sonic Adventure**

**(DC) Sonic Team**

Released the same day as this issue of **Edge**, *Sonic Adventure* is tempting, with six characters, vast levels and crisp visuals. The new console's must-have game.



**Sega Rally 2**

**(DC) Sega**

With the coin-op version securing a place in **Edge**'s top three arcade titles of 1998, and a Dreamcast waiting in the games room, this had better be good...



**Hired Guns**

**(PC) Devil's Thumb**

Fond memories of the Amiga original ensure that DTE's update receives full attention this issue. Four characters to control and *Unreal*'s engine. Interested?



**All-Star Smash Bros**

**(N64) HAL**

Quirky, colourful and very intruiging, *All-Star Dai-Rantou Smash Brothers* scores points merely on the strength of its name. Another NCL classic?

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# PRESCREEN ALPHAS

**HORROR IS A PREVAILING THEME THIS MONTH, WHICH SEES PREVIOUS ALPHALITES RETURN IN IMPROVED FORM**

## SHADOWMAN

FORMAT: **PC/NINTENDO 64** DEVELOPER: **IGUANA UK**













These latest PC shots of Iguana UK's forthcoming thirdperson adventure are proof that the game continues to be right on track to emerge as one of the darkest and most disturbing videogames ever created. It should also be one of the bloodiest around as you battle the evil forces within the Asylum in Deadside – the plot has been worked on heavily and suggests a totally immersive experience.

## DRIVER

FORMAT: **PC/PLAYSTATION** DEVELOPER: **REFLECTIONS**













Newcastle-based Reflections has spent the few months since **Edge** last visited its office busily enhancing its current main development. On the PlayStation (version shown), for example, the game now employs the machine's hi-res mode, the night sections boast impressive lighting and pedestrians can be seen walking, running, or just sitting around doing little. Weather effects such as rain and snow are also included to complete a potentially great title.

## HOMEWORLD

FORMAT: **PC** DEVELOPER: **RELIC**









First seen at ECTS, the current version of Relic's space-based dog-fighting-led strategy title is very impressive. The framerate problems (a worry when **Edge** first saw the game) are no longer present and the whole game benefits tremendously as a result. This tweaking has meant the game has missed its anticipated pre-Christmas release, although players are more than likely to forgive the developer once the finished title ships.

## EHRGEIZ

FORMAT: **PLAYSTATION** DEVELOPER: **DREAM FACTORY (SQUARESOFT)**

Out in Japan by the time this issue hits the streets, it will have taken Square over a year to port the System 12-driven arcade beat 'em up to Sony's 32bit box. Recent demos were promising, with the automatic function ensuring characters face each other – which proves very gameplay-friendly. As well as the coin-op's characteristics, there are five new fighters and four sub-games similar to those found in *Tekken 3*. According to sources, Square is not expecting to release a PAL version.






### MAGICAL TRAIN ADVENTURE

Developed by Sega's AM3 division, *Magical Train Adventure* features a unique cabinet design which has given the developer the freedom to create a rather unique game to match. Riding on a hand-operated railcar, you must power the train along a track while using your feet to kick away any obstacles. **Edge** has yet to sample *MTA*, but is keen to try out what must be one of 1999's strangest offerings.



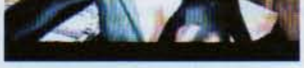

## ZOMBIE ZONE

FORMAT: **ARCADE** DEVELOPER: **SEGA AM1**

Originally entitled *Blood Bullet*, Sega's second zombie-filled arcade adventure mixes the company's *Die Hard Arcade* with Capcom's *Resident Evil* series. Initial impressions favoured the game's visuals although the control system felt as though it needed further work. Still, shooting hordes of walking corpses is always worth a shiny coin or two.







## GT WORLD TOUR

FORMAT: **NINTENDO 64** DEVELOPER: **BOSS GAMES**

Snowblind Studios may be responsible for the likeable *Top Gear Overdrive* (see p95), but this March release is *Top Gear Rally*'s spiritual successor. True, there isn't a rally car to be seen, but it shares the same developer. This time, though, the focus is on the world of supercars with, among others, detailed Chryslers, Ferraris, McLarens, and Nissans promising realistic dynamics.











### KINGSLEY

After the desperate failure that was *Rascal*, it would perhaps have been sensible for Psygnosis to leave the thirdperson platform genre well alone. However, the company's Camden development studio is trying to crack the young gamers market again with *Kingsley*, a 3D arcade adventure for the PlayStation featuring the fox-cub of the title. The game comprises 11 stages, but whether *Kingsley* can upset *Crash*'s party is a job for its marketing dept.





## WILD METAL COUNTRY

FORMAT: **PC** DEVELOPER: **DMA DESIGN**

It's from DMA, so don't expect *WMC* to make sense – at least not initially. But you can expect it to be rather playable, as well as including plenty of original – if occasionally far-fetched – ideas. Actually, compared with some of its previous titles, the fundamental concept is unusually rational: choose a tank and travel around the levels blasting the enemy equivalent.











### POWER STONE

More Dreamcast shots of Capcom's forthcoming and immediately impressive beat 'em up. Making an initial appearance on Sega's Naomi arcade board, the technical similarities between the latter and the company's superconsole should ensure that not only is the confirmed conversion likely to occur with relatively little effort, but that the visual quality should remain largely untouched. **Edge** hopes the same applies to the intriguing gameplay.





## SEVENTH CROSS

FORMAT: **DREAMCAST** DEVELOPER: **NEC HE**












A-life titles are always very interesting from a theoretical aspect, but rarely fun to 'play'. Here, after designing a creature (by determining the character's DNA structure), you can watch it evolve and feed itself. Should you have the patience, toying with DNA sequences can produce 810,000 character combinations, which should keep fans of the genre busy for a while...

## SILVER

FORMAT: **PC** DEVELOPER: **INFOGRAMES**











Magic, realtime combat, many beautifully recreated locations, and mad kung-fu monks – *Silver* has them all. Infogrames' westernisation of classic eastern RPG elements is looking increasingly capable of delivering all it has promised in the last few months. Should it succeed, it would represent a massively significant achievement for European videogame development.

## REQUIEM

**FORMAT: PC DEVELOPER: CYCLONE STUDIOS**

As Malachi, one of Heaven's chosen soldiers, your task is to defend humanity from Hell's fallen demons. Incarnating an angel places a whole range of spells and other original angelic powers of attack and defence at your disposal as you progress through a detailed world, interacting with the characters you meet. Interestingly, not all situations you face necessitate mindless violence.











## DARK STONE

**FORMAT: PC DEVELOPER: DELPHINE**

It would be easy to describe *Dark Stone* as a *Diablo* clone, but with the action occurring within an interactive 3D environment. A dungeon-based, spell-casting action RPG, the claustrophobic among you will breathe a sigh of relief to learn that it does also feature outside environments such as towns, although it remains aimed at a dedicated audience.











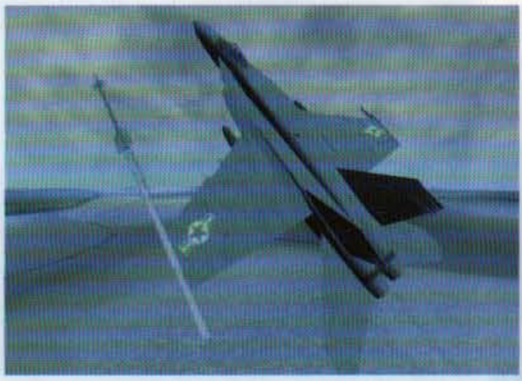


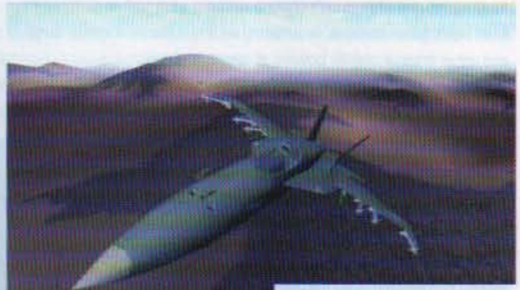





## F/A-18E SUPER HORNET

FORMAT: **PC** DEVELOPER: **DIGITAL INTEGRATION**







Although hardly the favourite genre of hardcore players, flight sims are – if nothing else – useful in showcasing new technology which eventually transcends other videogame categories. Digital Integration's *F/A-18E Super Hornet* promises intriguing new features (such as a fully functional aircraft carrier) which hopefully the gameplay will match.

## DRAGON VALOR

FORMAT: **PLAYSTATION** DEVELOPER: **NAMCO**





Another RPG to emerge from Japan, *Dragon Valor* bases its concept on past classic interpretations of this potentially engrossing genre and requires you to explore vast lands filled with danger and guarded by unfriendly dragons. The game features a structure similar to the Mega Drive's *Phantasy Star III*, whereby once your character marries, your quest continues via the couple's first-born which inherits some of their attributes.





## STREET FIGHTER ZERO 3

FORMAT: **PLAYSTATION** DEVELOPER: **CAPCOM**









The western massmarket's interest in Capcom's long-running 2D beat 'em up series may have dwindled, but in Japan there are still enough hardcore fans to guarantee decent sales of this latest iteration of the *Zero* games on the PlayStation. Although close, the console interpretation is expected to lose a little graphical detail, most evidently in its animation, but this shouldn't be to the detriment of the fundamentally solid gameplay.

# CASTLEVANIA 64

Long the preferred choice of hardcore 2D platforming fans, Konami's vampire series enters the 64bit era with a three-dimensional offering







Visually, *Castlevania 64* has progressed immeasurably since the early versions from a few months back. The bosses have increased in stature, too (above)




Just as in Konami's PlayStation title *Metal Gear Solid*, you'll be able to flip to a firstperson perspective in realtime in order to pick out detail





Schneider is the latest Belmont to carry on his family's obsessive pursuit of Dracula

Format: **Nintendo 64**

Publisher: **Konami**

Developer: **In-house**

Release: **Jan (Jap) May (UK)**

Origin: **Japan**

*Castlevania IV* on the SNES was one of the machine's most playable titles, yet it never enjoyed the success it deserved. This was partly due to the game's first two truly uninspiring levels, which left the majority of players cold. A little persistence would have revealed one of the 16bit era's true classics, offering a hugely compelling adventure, addictive 2D gameplay and some masterful graphical effects.

The series' PlayStation debut embodied these same values, and still stands as one of the most complete videogaming experiences to grace Sony's machine – yet it too failed to capture the attention of the massmarket. So this latest instalment, now on the N64, has rather a lot of work to do. Konami must be hoping that the series' move into 3D will attract a more mainstream audience.

The bosses' demises can be gruesome, **particularly the giant ram whose flesh is ripped off** to reveal a pack of pulsating vital organs

Regardless of the perspective, though, you still need characters, and *Castlevania 64* has two. Muscular, agile and armed with a strong sense of justice (and a handy whip), Schneider Belmont has vowed to return Count Dracula to the realm of the truly dead after learning of his recent resurrection. Carrie Eastfield, on the other hand, is fragile and weak at close combat, but then she's only 12. However, young Carrie does possess powerful magic spells, which ensure the destruction of the servants of the kingdom of the undead from a relatively safe distance.

And if there's one thing either character is sure to find before facing the Prince of Darkness for a final confrontation, it's plenty of his obedient minions. These take many forms, but expect to encounter rabid hounds, possessed knights, and suicidal skeleton bombers. Naturally, the game also features vampires,












In order to avoid the usual camera problems associated with 3D combat sequences, you can lock on to the nearest adversary by pressing the Z trigger




**A combination of great graphics, excellent soundtrack and dramatic camera angles (top) ensure *Castlevania 64* is particularly atmospheric**





**Although weaker than Schneider, 12-year-old Carrie has devastating spells at her disposal**

but, due to their aversion to ultraviolet rays, you'll only encounter these foes when darkness cloaks the land.

In fact, *Castlevania 64*'s night/day cycle is one of its most interesting features and has significant gameplay implications. Of course, it's more dangerous (and scarier) to venture out when the sun isn't shining, but certain clues and puzzles can only be found or solved by returning to a particular area after dark. This doesn't occur in realtime, naturally, but to help those with MTV-conditioned attention spans, there are items that further accelerate time.

Overall, there are surprisingly few platforming sections, and several RPG elements are included (you'll meet several NPCs who offer useful information, for example). To avoid inconvenience, Konami has borrowed one of *Zelda 64*'s neatest features – you can lock onto the nearest enemy by holding the Z trigger, eliminating the problem of tracking a foe while fighting within a 3D environment.

In addition to the characters' primary and secondary weapons, you'll come across other armaments as you explore Dracula's humble dwelling. Power-up gems are scattered throughout, as are gold coins that you can use to purchase helpful goods from a mad demon (doubling as a travelling salesman) which can be summoned every time you come across a scroll.

The latest build **Edge** played seems very promising. Graphically it is a massive improvement, with plenty of detail and special effects evident throughout. In particular, most of the bosses are stirring, attention-commanding masses of polygons – and the process of their demise can be rather gruesome, particularly the giant ram whose flesh is ripped off progressively to reveal a pack of pulsating vital organs. On a lighter note, the control system has also been tweaked and is now tighter, particularly as far as ledge jumping and combat are concerned (in fact, using Belmont's cord-like weapon works remarkably well).

All in all, things appear to be shaping up well for *Castlevania*'s first 64bit foray.



**The game's 3D engine is a capable one, and Konami's designers make full use of it with both interior and exterior sections**







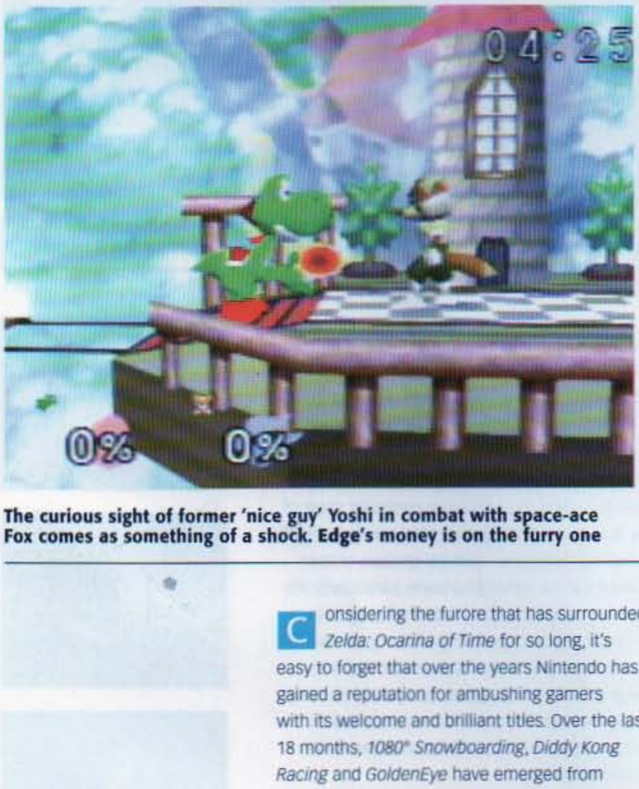
**The gigantic ram (above) appears early on in the game and is just one of many grotesque bosses that must be beaten before you reach Dracula**

# ALL-STAR SMASH BROTHERS

**As the pool of reiterable 16bit Nintendo classics dries out, HAL Laboratory gathers NCL's boys together in an inspired and typically unconventional all-star beat 'em up romp**






**The curious sight of former 'nice guy' Yoshi in combat with space-ace Fox comes as something of a shock. Edge's money is on the furry one**

***All-Star Dai-Rantou Smash Brothers* is, in fact, the full title of this unusual beat 'em up, which translates as All-Star Big Free-fight Smash Brothers**

Considering the furore that has surrounded *Zelda: Ocarina of Time* for so long, it's easy to forget that over the years Nintendo has gained a reputation for ambushing gamers with its welcome and brilliant titles. Over the last 18 months, *1080° Snowboarding*, *Diddy Kong Racing* and *GoldenEye* have emerged from nowhere to delight the games world.

The latest piece of software to join that list is the fabulously monikered *All-Star Dai-Rantou Smash Brothers*, developed by longtime Nintendo affiliate HAL Laboratory, responsible for the *Kirby* series of games. *Smash Brothers* is, like new sister title *Mario Party* (see Prescreen Alphas, **E**66) and the wonderful SNES racer *Super Mario Kart*, an off-kilter spin on NCL's hottest intellectual properties. Since the N64's birth, owners have been crying out for a well-executed fighting game. This, true to form, is Nintendo's unconventional response.

It would be easy to write off *Dai-Rantou Smash Brothers* as a game targeted at younger players, but history has proven that even if that was Nintendo's intention, older gamers have found much to enjoy in its products. Perhaps the closest point of reference is AM1's mech combat coin-op *Virtual-On*, not for its visual style but its gameplay design. *Smash Brothers* pitches classic Nintendo characters into battle in open arenas, where long-distance attacks and avoidance tactics are more useful than close combat.

HAL Laboratory appears to have focused on making *Smash Brothers* as accessible (also read enjoyable) as possible. Although your character can be knocked out of the fight zone, you have a limited amount of time to re-enter and continue rather than being disqualified. Games are intended to last a little longer than in more generic beat 'em ups, with the aim being to

Format: **Nintendo 64**

Publisher: **NCL**

Developer: **HAL Laboratory**

Release: **Spring (Japan)**

Origin: **Japan**




**It's almost certain that the game will have hidden characters, levels and play modes**

















A fourplayer bout sees the respective characters using their individual skills. Each of them has weaknesses, but if you can't put them down and your energy is fading fast, then you can always resort to the ring out option...

***All-Star Smash Brothers'* graphics are spattered with Nintendo's usual bright palette of colours. Donkey Kong's head is a bit pointy, though**

















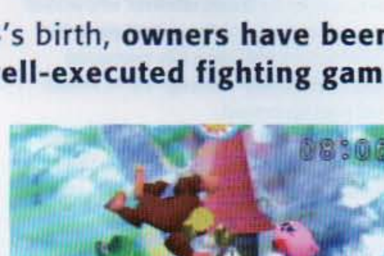
**This star-studded cast reminds you just how skilled Nintendo is at creating videogame characters. Even Link and Pikachu appear**

knock down your opponents or push them out of the arena as many times as possible. The player with the most hits and highest energy level at the end of the round wins. Simple.

Each of the classic Nintendo stars employed in *Smash Brothers* has their own strengths and weaknesses. Mario (unusually) is the all-rounder; Donkey Kong is more powerful; Link has his sword and boomerang to hand; Samus has good long distance and air attacks; Yoshi's skill at licking up foes and popping them out of his rear as eggs hasn't been forgotten; Kirby can mimic his opponents' abilities; Pikachu can turn quickly and zap the others with an electric shock; and Fox is very fast and carries his blaster. Long-time Mario foe, the overbearing Bowser is also scheduled to make an appearance, as is Blue Falcon from *F-Zero X*, although it's not clear at the moment whether these will be boss, playable or bonus characters. Up to four players can compete at once.

*Smash Brothers* follows the beat 'em up convention of having a level dedicated to each of the protagonists. So far HAL and Nintendo have demonstrated three stages – Mario's Stomping Ground which is set on the rooftop of Princess Peach's castle, Donkey Kong's Home Ground in the Congo jungle, and Pickachu's Pad

## Ever since the N64's birth, **owners have been crying out for a well-executed fighting game.** This is Nintendo's response




**A chaotic fourplayer game grinds to a halt due to a hiatus in the force of gravity**

in Yamabuki City, which features moving platforms. It's expected that *Smash Brothers* will unlock several bonus stages and characters once various targets have been met by the player.

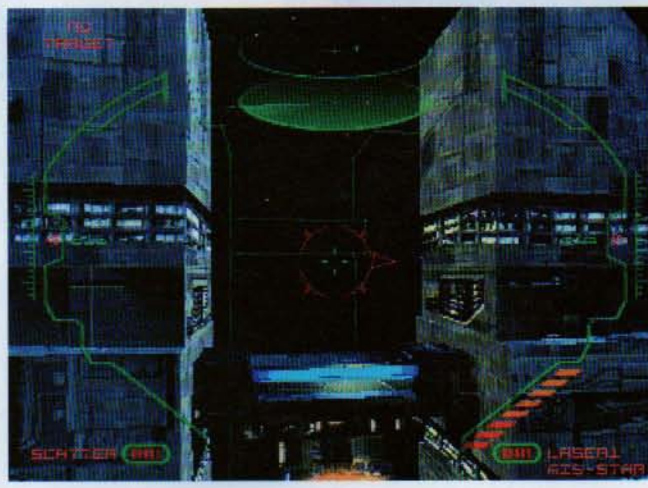
Though it has been developed out of house, *All-Star Dai-Rantou Smash Brothers* bears all the hallmarks of past Nintendo masterpieces. Little touches, such as power-ups appearing during fights with either healing or destructive effects, or even 'dead' characters flying up out of the combat zone to become stars in the sky, are part of what makes NCL's games such fun to play. **Edge**, for one, is already hooked.

# G-POLICE 2

**Subtitled *Weapons of Justice*, Psygnosis' sequel to 1997's *G-Police* is unlikely to win the attention of any arthouse film buffs with its blockbuster-style explosions and plot**









**As in the original game, *G-Police 2* manages to create a moody, if slightly sterile world in which to hunt the forces of evil**

**Rather than mire themselves in trying to extend the draw distance, the development team instead implemented a smarter wireframe system**

Format: **PlayStation**
Publisher: **Psygnosis**
Developer: **In-house**
Release: **Spring**
Origin: **UK**

Videogames – indeed much of modern technological culture – owes a debt to 'Blade Runner'. In 1982 Ridley Scott's grubby filmic interpretation of Philip K Dick's novel 'Do Androids Dream of Electric Sheep' redefined the world's view of its future, and no right-thinking film or videogame producer could expound an optimistic or pleasant vision ever again.

Psygnosis' *G-Police* epitomised the 'Blade Runner' gaming experience, casting the player as the pilot of a hi-tech police attack ship in pursuit of rebellious criminal elements. Through a dank and oily nocturnal cityscape, naturally.

The game, developed by Psygnosis' Wheelhouse studio on the outskirts of Stroud in south west England, was an absorbing and atmospheric experience – if its complex control system could be mastered. Certainly *G-Police* was in a different league to the shallow offerings that have typified Psygnosis' recent output. And now, led by **Stuart Wheeler**, who worked as a level designer on the original game, the development team has a fully overhauled sequel on the way – although the PC version has been abandoned.

"We're very conscious of the fact that it [*G-Police*] was a very good game, but there were fundamental flaws in it that stopped it reaching a wider audience," says Wheeler.

"That's due more than anything to the fact that we got too close to the product, too used to the way we had become expert at it," he admits. "The difficulty curve and the controls weren't tweaked as much as they should have been."

As Wheeler says, *G-Police*'s greatest shortcomings centred around the clumsy control system, and a limited draw distance brought about by the over-complex vehicle and building





Simple yet highly effective refinements to the control system have wrought a minor miracle and improved the gameplay significantly over the original game




Some of the larger targets are impressive in their scale, including several gigantic craft that must be repeatedly hammered to down them







By fitting new vehicles into the *G-Police* play system, Psygnosis' team is hoping to breathe fresh life into the game's sequel

models used in the game. Both of these factors are being addressed, along with other additions to the core concept because, as Wheeler puts it, "We do not want to do a mission disk – we want to do a proper, full sequel."

The team has taken an unusual and cunning approach to the short-draw-distance problem. Rather than trying to embellish the 3D engine to push back the fogging (and thereby slowing the framerate), the programming team, led by Gavin Whitlock, decided to outline all the distant objects in green wireframe. This option has effectively doubled the visible distance yet has cost minimal processor time – and it works superbly, if anything adding to the sense of piloting a futuristic craft.

*G-Police*'s other glaring weakness was a fussy control system that required constant monitoring and adjustment of the level of thrust propelling your Havoc attack ship. In place of this, the sequel's craft are driven like a car, with motion ceasing if the accelerator button is released. It makes for a simple yet immediate improvement in the gameplay.

In addition to this, the standard hover ship has been joined by new vehicles – the more capable Venom, the Raptor walking machine (much like the AT-ST Imperial Walkers in 'Return of the Jedi'), and the Rhino – a heavily armoured car equipped with an automatic turret. However, while the others are welcome and varied in their abilities, it's the final extra craft which is likely to generate the most interest.

For the last six missions of *G-Police 2*, the action shifts into high orbit, as your intrepid officer follows the plot off-planet for the ultimate showdown with the renegade forces. Bearing a marked resemblance to Psygnosis' *Colony Wars* and *Blast Radius*, these stages of the game are held in free-roaming 360-degree space, rendered in the PlayStation's high resolution mode, albeit at the expense of the attractive motion blur effect used in the rest of the game.

Rather than trying to **embellish the 3D engine** to push back the fogging, the programmers decided to **outline distant objects in green wireframe**

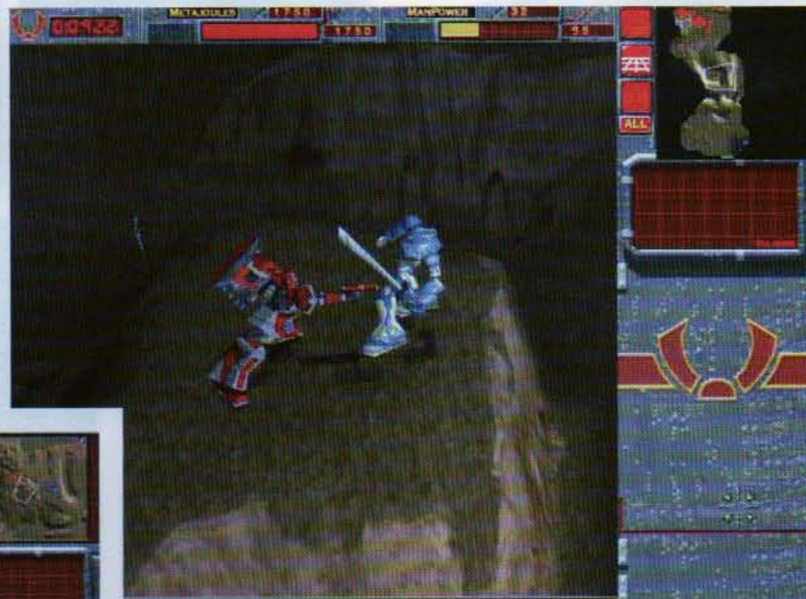
"We want to make the sequel so that more people can appreciate it," claims Wheeler. To this end, recognisable human characters are being placed ingame, to add a sense of empathy with the action. Wheeler is setting his sights high: "There aren't many games that people complete any more, and it would be nice to make *G-Police* one of those games. But you're not going to get it done in an evening..."

# METAL FATIGUE

**Psygnosis' latest game is geared up to pick off the RTS genre. Will the multilevel play and the mighty Combots be enough to rev jaded gamers' engines again?**







With an able 3D engine and a multilevel play feature under its belt, *Metal Fatigue* offers much more than giant manga-style robots smashing each other to bits



A heavy metal scrap in progress: your eye is inexorably drawn to the sight of the brutal blue robot playing percussion on his hapless foe

The wheels have come off the realtime strategy bandwagon. With so many developers jumping onboard, the genre has ground to a halt under the weight of countless free loaders. Fresh impetus is needed. And this is where Psygnosis' *Metal Fatigue* comes in. Though inspired by realtime greats like *Red Alert* and *Total Annihilation*, *Metal Fatigue* will stand or fall on the successful execution of its twin innovations: multilevel play and giant DIY robots.

The multilevel play equates to three battlefield layers, with the traditional ground war spilling over into underground conflict and into the tussle for low-orbit supremacy. On the surface, the usual RTS factors hold sway. Robots rule the earth while bases, defences and cradles of industry must be established among the dips and curves of the uplifted 3D landscape. However, mastery of a map cannot be achieved unless you also control the geo-stationary asteroids above. Captured with aerospatial units, the orbiting stones can be transformed into huge weapons platforms, for battering the planet. Meanwhile, armies are secretly assembled below, before they burrow their way through solid rock to surprise the enemy base on the surface. You play all three operational theatres at once and the interface will be windowed so you can juggle between air, ground and crust simultaneously.

Psygnosis is also preparing an almighty combination punch with its metal behemoths. Known as 'Combots' they dwarf other units, and are the focus of battle thanks to their modular design approach. Via research and industrial espionage, you can develop or thieve new technologies for your war engines and slot them together to make individual 'bots composed of torso, arms and legs. Body parts offer combinations of speed, strength and jumping ability, while weapons include a Katana sword, power swords, buzz saws, missiles and jetpacks. Weight is a factor, so compromises will have to be made to keep a robot moving.

Backed by a respectable-looking 3D engine capable of multimetric perspective in the *Myth* style, *Metal Fatigue* has every chance of breaking the RTS factory mould.

Format: **PC**

Publisher: **Psygnosis**

Developer: **In-house**

Release: **May**

Origin: **US**



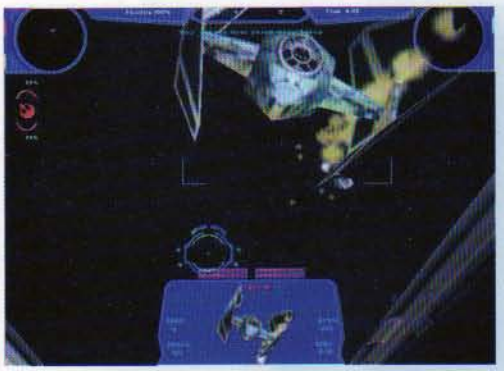




**The Katana sword is a powerful weapon that also proves relatively lightweight – a factor that can affect the robots' mobility**

# X-WING ALLIANCE

**Just in time for the new 'Star Wars' movie, LucasArts presents another addition to its *X-Wing* franchise – yet *Alliance* has more going for it than convenient timing**







Thanks to 3D card support, *X-Wing Alliance*'s polygonal environment is far more detailed than the previous instalment, *X-Wing vs TIE Fighter*









**The introduction of trading elements has vastly enriched this latest addition to the popular *X-Wing* series**

Format: **PC**

Publisher: **LucasArts**

Developer: **Totally Games**

Release: **Spring**

Origin: **US**

There are few sure things in the fickle PC market, but a combination of action-based space simulation and the 'Star Wars' license is a pretty safe bet. Indeed, it has been a successful formula so far for LucasArts, whose *X-Wing* series of space shoot 'em ups has long been the mainstay of its PC oeuvre.

Larry Holland and his 15-person team are making a welcome return to substance and plot with *X-Wing Alliance* – responding to criticism from fans that *X-Wing vs TIE Fighter*, the last instalment, was too clinical – casting the player in the role of a Rebel pilot and strongarm of a family trading business. The result is an involving story that manages to pit the player against not only the Empire, but also the pirate armies of a rival trading family and their less than savoury overtures. Holland describes it as 'The Godfather' meets 'Return of the Jedi'.

The trading element opens up new possibilities for the 'Star Wars' universe. The number of new ships has increased, including new models that have previously only been seen in detailed sketches prepared by Lucasfilm for the movies. The chance to command the Millennium Falcon will be highly anticipated by 'Star Wars' fans, as will the promised Battle for Endor, which should include as many as 128 ships in battle concurrently. Holland maintains that they had twice that number running but reduced it to keep the framerate up.

The graphical advances made over *X-Wing vs TIE Fighter* are considerable. With a 3Dfx card in place, the ships are far more detailed, with pilots even visible in their 3D virtual cockpits – one of the game's most dramatic and effective improvements. There's also an impressive sense of scale when approaching a starbase – something accentuated by the wealth of moving starcraft that operate independently of your own ship.

There are only a few months left for Holland and his team at Totally Games to finish off this potential epic. Work is now centred around balancing missions and implementing some complex AI to monitor the behaviour of the non-player-controlled craft and enemy ships – a limited amount of ammo now means that they have to return to base to re-arm before returning to battle.

Around the same time Holland puts the finishing touches to *Alliance*, George Lucas will be sending his final cut of 'The Phantom Menace' to Fox. With Episode One hovering tantalisingly on the horizon and LucasArts already well into production of the prequel games, 1999 really is shaping up to be a truly memorable year for *Star Wars* fans.





**The chance to pilot the Millennium Falcon should have most *Star Wars* fans prepared to sell family members in order to obtain a copy of *X-Wing Alliance***

# ACE COMBAT 3

**Will Namco finally get it right third time around? If you take to the skies for this stylishly revamped dogfight, the enemy might not be the only thing to surprise you...**



**Although the terrain remains predominantly a scaled bitmap, the scenery is punctuated by polygonal skyscrapers. These are fantastic to negotiate at speed**







**This could be the first console-based flight sim to offer intelligent play *and* stylish dogfights**





**Edge hopes that the final version will see you actually flying under the bridge leaving a wake in the river**

Format: **PlayStation**

Publisher: **Namco**

Developer: **In-house**

Release: **TBA**

Origin: **Japan**

Sadly, the arcade-style flight sim has progressed little since Sega's glamorous but shallow *Afterburner*. And Namco's *Ace Combat 1* and *2* supplied firm evidence of this.

By offering uncomplicated physics models, almost arbitrary 'waves' of enemy craft and a fine line in 'fire and forget', Namco lost the sense of immersion and intensity that so epitomises the best PC flight sims, yet offered little in the way of a quick, accessible blast to ameliorate that loss. *Ace Combat 3* must therefore work hard to attract gamers who are intrigued by the prospect of simple plane-to-plane dogfights, yet disappointed by the failures that have marred this sub-genre.

Namco has aimed to improve the aesthetic appeal of this third *Ace Combat* but, unusually, the Japanese softco has decided to base *Ace Combat 3*'s action in the 'near' future. While familiar planes and ordnance are again available for selection, a clutch of fanciful Namco-designed aircraft occupy prominent starring roles.

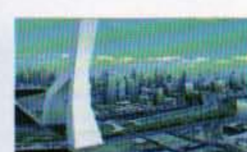
Namco is keen to stress that *Ace Combat 3*'s dogfights are more involved than the often lightweight exchanges of its predecessors. Rather than firing from a distance with relative impunity, players will have to tackle the enemy and their improved AI with skill and forethought. The ability to pinpoint a distant cluster of pixels is (in principle) no longer the fast route to success.

That *Ace Combat 3* features Dual Shock compatibility will come as no surprise, but the promise of an analogue control system is interesting, to say the least. Imagine, for example, the ability to use a cockpit-based view, with one stick controlling craft movement and the other altering the viewpoint.

Combine such a feature with persistent, intelligent rival pilots who tail your plane in an attempt to gun you down from behind, and the potential for tense, atmospheric dogfights is huge. Alas, Namco is jealously guarding the 50-per-cent-complete version of *AC3*, so there are few firm gameplay details available.

The hardcore flight sim, cherished staple of the stereotypical PC owner's software collection, has little to offer console owners. Can a stylised, simplified dogfight sim succeed where its more complex cousin would fail?





***Ace Combat 3*'s visuals show a marked increase in quality over *Ace Combat 2***

# STAR IXIOM

***Star Ixiom* looks like a visual rework of Namco's previous sci-fi shoot 'em ups, but promises to be a much more challenging prospect than those linear efforts**









Namco's graphic artists have opted for a simple, colourful look. It's a novel approach, and a far cry from *Colony Wars*








***Star Ixiom*'s strategic backbone looks familiar – the *X-Com* style suggests that Namco is bit of a fan**

With a back catalogue featuring such career highlights as *Xevious*, *Galaga* and *Starblade*, Namco requires little introduction as an exponent of the space shoot 'em up genre. *Star Ixiom* sees the softco in progressive form, addressing criticisms of *Starblade*'s simplistic, linear structure by establishing a framework of mission-based objectives, giving the game (unusually for a console title) strategic depth.

Like stablemate *Libero Grande*, *Star Ixiom* is a game of two halves, with play split into two distinct sections. You deal with the adminsitrative details of your tasks in Map Mode, while the self-explanatory Combat Mode sees you fly actual sorties. Naturally, there's a symbiotic relationship between the two. In Map Mode, for example, it is possible to establish attack routes and supply lines. Should you neglect this duty, or perform badly, it becomes more difficult to achieve your targets in Combat Mode.

There are many parallels to be drawn between *Star Ixiom* and Microprose's *X-Com Interceptor* (including, lamentably, an outing for the hackneyed 'alien oppressors' narrative theme). However, Japanese interpretations of a design brief or genre tend to differ from those of their western coding equivalents. One example of this is *Star Ixiom*'s three play modes. Practice, obviously, provides a training ground for the novice, offering a gentle, informative introduction to its dual play styles, while Conquest Mode offers – like *X-Com Interceptor* – a full-scale, non-linear campaign. But, tellingly, there's a simplified Conquest option, where play is conducted on a more approachable and immediately gratifying mission-by-mission basis.

With progressively more powerful equipment up for grabs, and a variety of FMV sequences keeping the plot in tow, *Star Ixiom*'s debt of gratitude to its western cousins is obvious. In offering a more cerebral brand of play, though, it distinguishes itself as a relatively innovative PlayStation release. **Edge** is curious to see how the Japanese market reacts to a title with such obvious PC-style overtones.

Format: **PlayStation**

Publisher: **Namco**

Developer: **In-house**

Release: **TBA**

Origin: **Japan**





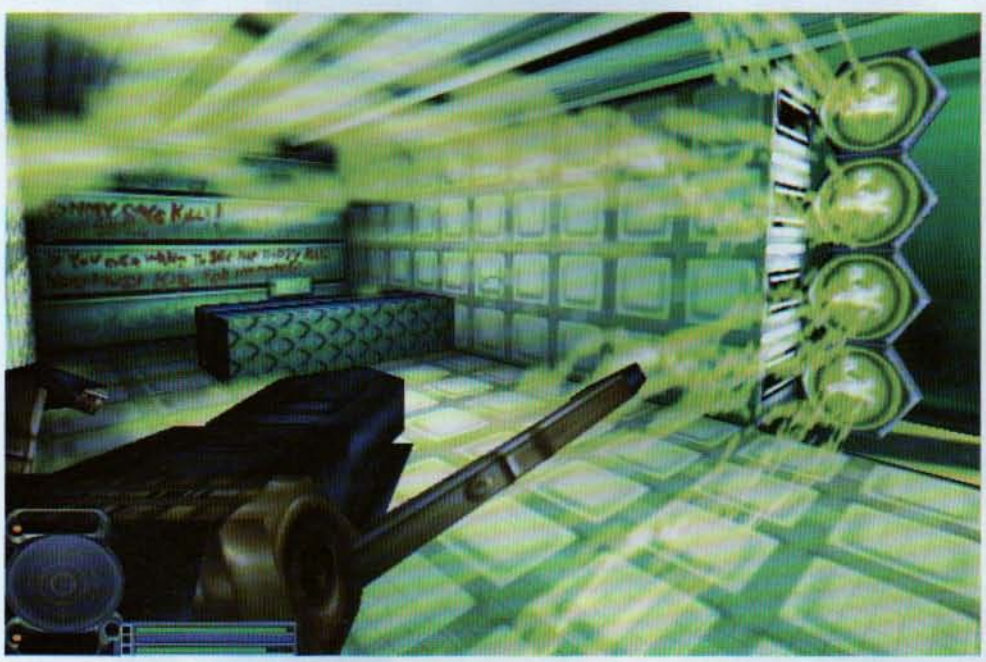
Space sections offer a convincing illusion of speed and scale, as well as the requisite colourful explosions






# HiredGuns

**Five years on from the Amiga original, DMA's inventive shooter is back. The simultaneous four-character play mechanic remains in place, but this time it's backed by a 3D engine whose reputation precedes it...**



Format: **PC**

Publisher: **Psygnosis**

Developer: **Devil's Thumb Entertainment**

Release: **June**

Origin: **US**

**The visuals are generated by *Unreal*'s 3D engine, a factor evinced by the same vibrant and surreal coloured light that envelops the game world here**



If ever a genre demanded careful contemplation before developers started creating a game to fit it, it must be the firstperson shoot 'em up. Certainly, now that Valve's intricate *Half-Life* has waltzed onto the scene, shattering all preconceptions about how such games should be made, the pressure is on designers to generate new and innovative ideas. Or, in the case of *Hired Guns*, revitalise old, innovative concepts.

The original *Hired Guns* was developed by DMA Design and published first for the Amiga by Psygnosis in 1992, with a PC version later. With firstperson games still very much in their infancy, limited more than anything else by the available technology, *Hired Guns* was simply revolutionary.

Rather than presenting the player with one character to command, DMA's game split the screen into four quarters, one for each of the quartet of mercenaries under your control. The mouse-driven action occurred simultaneously (and sometimes confusingly) on all four sub-screens. Soldiers could group, swap arms and items, and be used tactically to solve the various missions. Conceptually, *Doom* and its progeny are simply of a lower order.

Seven years on and Colorado-based developer Devil's Thumb Entertainment is attempting to refresh and enhance *Hired Guns* to take the game into the new millennium. Formed from what was once







Devil's Thumb is promising over 17 weapons in this *Hired Guns* update, from simple, classic fare such as assault rifles, to the 'Cheese Grater' laser sword and the 'Big Daddy' nuclear launcher

DMA's American studio (and still part-owned by DMA founder David Jones), Devil's Thumb is well placed to understand the demands of the task. Led by **Antony Harmon**, ex-NOA director of development and acquisition, now president of Devil's Thumb, the project group contains members of the first game's team. David Osbourne and Graeme Anderson are art director and programmer respectively on the update, and original script writer Steve Hammond has been drafted in as a consultant, while a further 12 staff complete the group.

## Engine for hire

Harmon says the initial impetus for updating the game came from David Jones.

"He called me as he'd seen the *Unreal* editor in its development stages," relates Harmon. "Dave and Tim Sweeney [of Epic] met and had some great gaming discussions. DTE and Dave decided to do this game out of our US office as some of the key original staff were based here." And so, powered by the acclaimed 3D engine that gathered so much attention for Epic and *Unreal*, *Hired Guns* has been in development for around 17 months.

Sub-letting the 3D engine rather than creating one from scratch has had significant benefits, as Harmon explains.

"We feel the *Unreal* engine is the best one for colours and lighting, and the editor is a joy to work with," he beams. "In essence, this gave us time to hit the ground running, to make the most of our development time by building the levels and making the environments graphically outstanding."

**"A leap forward of five years in technology means that we can bring the game to life, increase the pace, improve the graphics from slide shows to full 3D, and expand the size and detail of the levels"**

Visually, there's no mistaking the many-hued influence of Epic's polygon engine, although Devil's Thumb has had to watch the load being placed on the graphics code.

"We had to be very disciplined and develop tricks along the way to maintain the polygon count and texturing goals we had set ourselves," admits Harmon. However, he is also adamant that, "A leap forward of five years in technology means




It will be interesting to see whether Epic's mighty 3D technology can cope with the stresses and strains of running four independent firstperson displays...





Locations are vast, although a powerful magnetic grappling hook enables you to traverse large areas with little risk of attack

**The original *Hired Guns* was often confusing when all four characters were under attack. Edge hopes that this was due to the slow screen update, and won't prove a problem in this latest outing**




















**Your troops can be used either individually or organised into a strategic group to solve the puzzles that punctuate the game**

that we can bring the game to life, increase the pace, improve the graphics from slide shows to full 3D, and expand the size and detail of the levels." (The original game's core limitation was that movement took place in large steps, rather than through smooth 3D progression).

Rather than quarterising the screen as before, Devil's Thumb has opted to display *Hired Guns'* action via one larger segment, representing the currently controlled character, plus three smaller views for the others. The remaining space is occupied by a panel containing buttons to activate the various strategic commands. However, you'll also be able to expand one of the four mercenaries' views to full-screen when occasion demands it. Only by swapping between the protagonists can the missions be successfully completed.

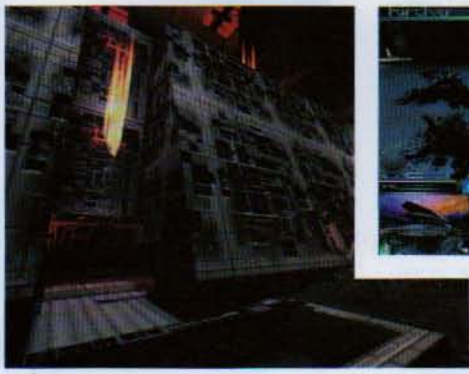
Clearly, the potential within *Hired Guns* for multiplayer gaming is enormous, as even the Amiga original was able to host a simultaneous twoplayer experience through the use of two mice with one machine. Harmon and the team have ambitious ideas for the update, with support for both LAN and Internet connections.

"When in the quad-screen mode, the player will be able to see his three other teammates in the lower, smaller screens in realtime," enthuses Harmon. "We feel this quad-screen mode is really the multiplayer direction of the future – instead of the current simple solution of making one team 'red' and the other team 'blue', *Hired Guns* will allow players to attack tactically and act more as a team." With network gaming seemingly on the cusp of a major growth period, *Hired Guns'* targeted June release may prove timely – although a Dreamcast version seems unlikely, due to Sony's ownership of Psygnosis.

## High expectations

While set to bring some long overdue fresh ideas to the firstperson genre, Devil's Thumb hasn't forgotten what is expected of such games. An estimated 17 different weapons are destined for the final version of *Hired Guns*, supplied from the fictional Roth Arms Co. On offer are traditional delights such as rail guns, assault rifles and grenade launchers, plus more esoteric devices like zero-gravity rifles, the 'Big Daddy' cold-fusion launcher, a mine layer and a razor-edged blade called the 'Cheese Grater'. In addition, a magnetic grappling hook is available to traverse distances up to 500 metres.

Harmon and the team seem well aware of the conceptual values of the game, from its atmospheric pace and ambience to maintaining the right balance of action and puzzle elements. But, as Nintendo has discovered to its cost, updating classics can be troublesome. Fans of *Hired Guns* will have to spend another six months on the edge of their seats before seeing whether Devil's Thumb is up to the challenge.



**Music is reportedly of the cyberpunk variety, but don't switch off – it's intended to add atmosphere**







# SoulBringer

**Soulbringer may contain the usual RPG clichés, but it also boasts an advanced combat system, sophisticated magic features and an epic storyline that promises much demonic revelry**

Format: **PC**

Publisher: **Gremlin**

Developer: **In-house**

Release: **June**

Origin: **UK**

When Gremlin's marketing department asked for an outline of *Soulbringer* to help them prepare some press releases, they didn't bargain on getting a 430-page story. It documented the heroic exploits of Harbinger, 'a warrior-king who died by the hands of those he sought to destroy – the legendary demon Revenants', and explained how, as Soulbringer, the player would take up his mantle in a bid to free the land 'from the yoke of the Demon Lords'.

Is *Soulbringer*, then, a game steeped heavily in – how should **Edge** put it – the heritage, or would that be the clichés, of roleplaying?

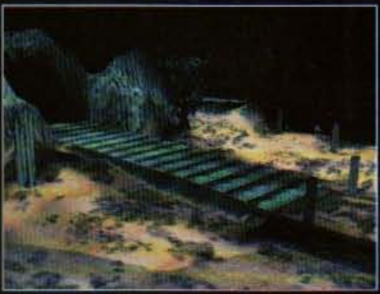
## Dark, demonic and deep

"Both," reckons **Paul Green**, designer and author of the epic story in question. "I think there are certain elements in RPGs that roleplaying gamers want to see but, having said that, there are no dwarves and elves, none of that Tolkien stuff."

"The original idea was to come up with something with the depth of *Ultima VIII*, but a bit prettier," elaborates **Steve Lovesay**, lead programmer and first of the now 16-man team to be assigned to *Soulbringer*. A 3D engine viewed from a thirdperson perspective provides this prettiness, but 'pretty' is hardly the best word to describe the dark, hard look of







**The idea behind the game was to create a better-looking version of *Ultima VII*, despite the dark overtones that serve to underline the demonic central theme**

the game, one in keeping with its central theme of demonic possession.

*Soulbringer* also uses the same engine for everything, cut scenes and combat included, to create a seamless feel. "Personally, I don't like the *Final Fantasy* approach to combat at all," reveals Green. "It takes you out of the environment completely. You've got absolutely no warning whatsoever that there's something up ahead. They are great games, but that's the only part that lets them down."

Integrating the combat system with the rest of the game is proving to be the toughest aspect of the experience. Nevertheless, in *Soulbringer*'s two years in development, as producer **Don Kirkland** freely admits, "We're really trying to make the combat system realistic so that when you fight it's not just a case of people standing on either side of the screen waving swords at each other. Because it's a 3D environment, when someone swings a sword we can do proper collision on the sword – it'll stop on a model's arm and blood will then pour out of the wound. It means we can have a very advanced combat system."

Another advanced feature is the game's sophisticated magic system, the Seculorum.

## The five elements

Based on five different elements – earth, wind, fire, water and spirit – each represented by a segment in a circle, the Seculorum responds to the way the player acts during the game. The more the player casts, say, a fire-related spell, the larger the fire segment becomes and the easier fire spells are to cast – the drawback being that the spells from the other elements become harder to cast.



**Interestingly, as your character's reputation increases, others join you, and a community soon develops where once there was merely a simple dwelling**

**"We're trying to make the combat system realistic so that when you fight it's not just a case of people standing on either side of the screen waving swords at each other"**

"In order to be a true elementalist," Kirkland asserts, "you really have to make sure you balance out the spellcasting of all the different elements."

As important as the mechanics of an RPG are, the *Soulbringer* team recognises that plot has a major part to play. But this is no backstory, to be read before the player even boots up. At the beginning, the player knows very little, only the myths of Harbinger, the local folklore. For most of the game's first







**The plot develops as you progress through the game and, unlike usual RPGs, *Soulbringer* requires you to return to the same location a number of times rather than seek out new lands**

"With the story being so involved, why give the player everything all at once? For a start, they're not going to take it all in. And you'll leave nothing for the rest of the game."

five acts, the player has no idea of their role in a much grander story – a deliberate strategy on the part of Green.

"How much do you want to insult the player's imagination?" he asks. "With the story being so involved, why give the player everything all at once? For a start, they're not going to take it all in. And apart from that, you'll leave nothing for the rest of the game."

Thus, *Soulbringer* begins with your arrival in the small village of Madrigal, in the middle of winter. You're searching for your eccentric uncle, on the instructions of your dying father. He offers to teach you magic, so long as you pay him. To earn money you find odd jobs around the village and pick up stories about Harbinger's mythic struggle with the demons. At a local festival, your destiny is revealed and you are transported to the Hex, Harbinger's old tower and your home base for the next four acts of *Soulbringer*'s story.

Returning to the Hex is a key feature of the game, one that gives it a real edge over its competitors, Kirkland claims.

## Homeward bound

"Unlike a lot of RPGs, you return to the same place many times. Madrigal, for instance, is where you start and you come back to the town throughout the game."

"As your reputation increases," Green adds, "you find loads of merchants and travellers coming to Madrigal to find you. The town fills up as the game progresses until, by act five, it's a thriving community with lots of different races, all allied under your banner."

The five acts of *Soulbringer*'s story are further broken down into three different categories of scenario. Primary scenarios contain everything concerning the main story, secondary scenarios help you enhance your character, and tertiary scenarios exist just for fun.

"Probably 90 per cent of the tertiary scenarios are quite distinct from the other two classes – they're just caves or mines or towers," explains Green. "When it comes to secondary and primary scenarios, you're not sure which are which when you're playing the game."

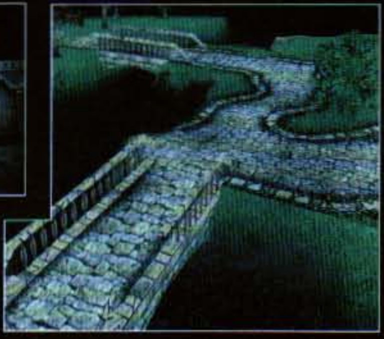
Playing time for this five-act epic should be a minimum of 50 to 60 hours, five times bigger than Gremlin's (and Green's) earlier *Realms of the Haunting*. "If you can do one act in ten hours, you are doing well," states Kirkland. "You're also not doing any of the tertiary quests and probably none of the secondary quests either."

With the game's emphasis on a subtly revealed story, realistic combat and seamless gameplay, **Edge** does wonder what place hit points, experience points, encumbrance and other throwbacks to pencil-and-paper RPGs have in *Soulbringer*?

"I know exactly what you're saying," replies Green, "but it's a way of informing the player, 'You're getting better.' Your die-hard roleplayers love that sort of stuff."

Those die-hard roleplayers definitely have something to look forward to in *Soulbringer* – and if Gremlin achieves all it has set out to, many more fans will be confronting their demons.





**The 3D engine used for the thirdperson perspective offered is, in RPG terms at least, very capable**



# Indiana Jones
## and The Infernal Machine

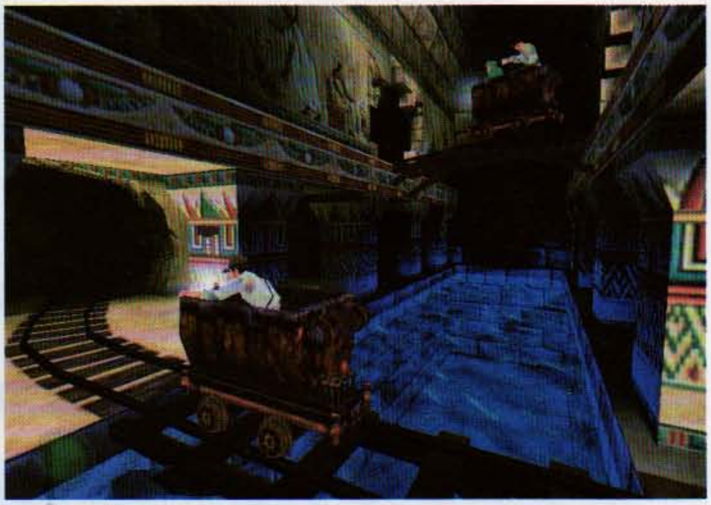
**LucasArts has resurrected the whip-wielding Mr Jones in a quest for the holy grail that is the *Tomb Raider* phenomenon**

Format: **PC/PlayStation**
(PC version shown here)
Publisher: **LucasArts**
Developer: **In-house**
Release: **March**
Origin: **US**

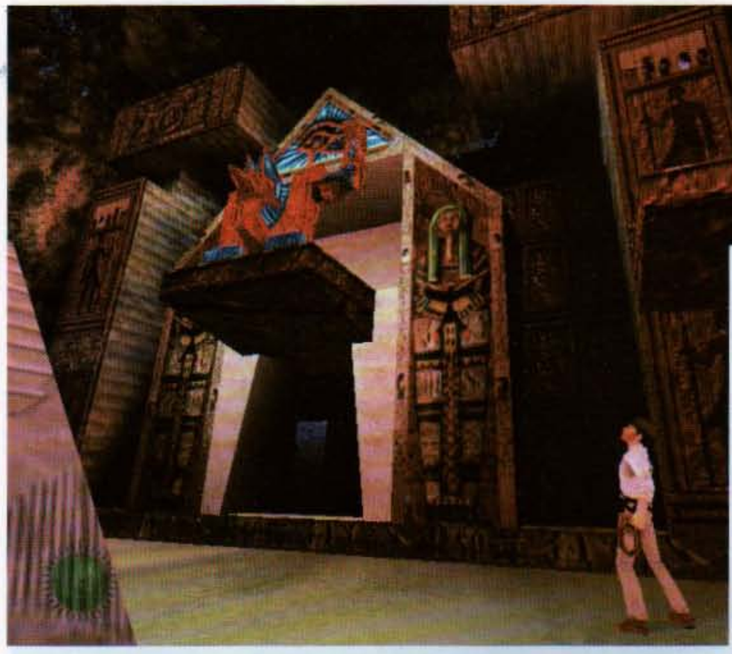
As a suitable yardstick to judge how popular videogames have become in the past few years, it is debatable who is the bigger star these days – weathered adventurer of yesteryear Indiana Jones or 'It girl', Lara Croft. But the similarities between the latest LucasArts-crafted action adventure and Core Design's globally renowned *Tomb Raider* trilogy are pronounced enough to raise this question. And from its exploratory-based gameplay tinged with puzzle elements, to its vast self-contained worlds based on ancient civilisations, *Indiana Jones and The Infernal Machine* is a thirdperson adventure that smacks so strongly of *Tomb Raider*, it's almost embarrassing.

But this doesn't seem to bother head producer **Hal Barwood**. The ex-Hollywood director and games designer is a big fan of the exploits of the buxom Ms Croft and sees his creation as accelerating the pace of a genre that has plenty more mileage.

"I got excited by *Tomb Raider*," he says. "It liberated 3D from the world of



**Of course, any Indy game would not be complete without an exciting mine cart ride, and LucasArts has made sure fans of the series will not be disappointed**







**Strongly influenced by Core's *Tomb Raider* series, LucasArts has introduced a third dimension to its Indy series but promises plenty of innovative ideas, too**

shooters and I do believe that this genre is huge and will be exploited over the coming years. Lots and lots of different games will appear that are similar to it in the sense that they involve a main character with a lot of personality.'

But LucasArts will need more than just Indy's personality to compete in this expanding new genre. After all, so far the company has found it difficult to succeed away from its traditional PC stomping ground of point-and-click adventures and simulations – the kind of games that it has built its name upon. So Barwood has put his 30-strong team hard at work on creating exciting new elements to uphold Indy's integrity.

## Infernal adventure

"We're bringing a lot of our own ideas and strengths to this experience. I think that we have a richer sense of puzzling and there's more of a story here – I believe that's the strongest differentiation."

Set in 1947 at the dawn of the Cold War era, the story sees Indy taking on the Soviets who are looking to harness the secrets of the mythical Tower of Babel located at an ancient archeological site in Iraq. In a plot whose foundations are essentially a reinterpretation of historical facts and biblical legend, Indy races the communists around the world to try and locate four crucial pieces of The Infernal Machine – a mythical contraption originally contained in the tower. Once assembled, the machine has the potential to tip the balance of world power in the Soviet's favour.

Again, Core may have been first to introduce globe-trotting to the action adventure, but Lucas is keen to stress that its game will bring a lot more cohesion to a story that spans such geographical locations as the mysterious Tian Shan Mountain region of Kazakstan to the Aztec pyramids in Teotihaucan and beyond. The game's locales also serve as settings for action sequences that include white-water rapid rafting, an off-road jeep chase through a jungle and, predictably enough, a mine cart ride – one overused gaming cliché that Indy can justifiably lay claim to.

Staying one step ahead of the Russians will require Mr Jones to solve

**"We're bringing a lot of our own ideas and strengths to this experience. We have a richer sense of puzzling and there's more of a story – that's the strongest differentiation"**









**As well as running, jumping, crawling, climbing and whipping his way through the levels, Indy can also raft (above) and operate a selection of machinery**









An integral part of the plot, and in the true spirit of the Indiana Jones films (and since copied by a disproportionate English aristocrat), *The Infernal Machine* takes Indy to wild geographical locations such as a mountain range in Kazakstan and the Aztec pyramids of Teotihaucan (shown)



**A 'visual clue system' works with the built-in map display and gives hints as to where Indy should be looking, should he need nudging in the right direction**

a variety of challenging mechanical puzzles that go well beyond the simple switch-pulling and exit-hunting of Core's game.

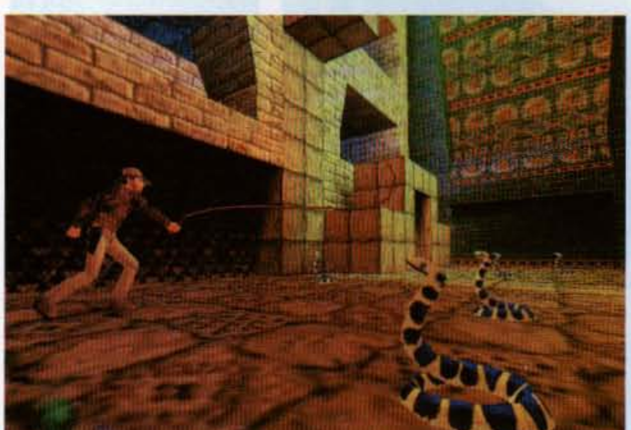
"The puzzles I've tried to design make you feel that you're participating in an adventure that's grounded in a certain amount of reality," explains Barwood. "That's why gears mesh and why, ultimately, cause has effect in everything you do." A 'visual clue system' (that can be toggled on or off) works with the built-in map display and gives hints as to where Indy should be looking, should he need nudging in the right direction.

Unlike *Tomb Raider*, Indy is set in a distinct period of history, so he's surrounded by military items left over from the Second World War. And while that means he might not have access to a BFG, he does get his hands on various Red Army machine guns, hand grenades and a WWII rocket launcher to add to his own trusty combination of whip and pistol. His repertoire of moves might be reminiscent of a certain female protagonist, but where Indy relies on brains as much as brawn in the films, in LucasArts' interpretation his agility extends to running, jumping, rolling, climbing, crawling and swimming.

## Greatest action hero...

Visually, *The Infernal Machine* gets a considerable boost from high-end PCs equipped with powerful graphics cards, with colourful textures and an impressively smooth framerate evident in the version **Edge** witnessed. Realistic lighting and fogging will be added to further increase the visual allure, making one of the best-looking PC adventures around. Moreover, Indy is well animated and captures the essence of his big-screen counterpart – even in the less accomplished PlayStation version, which is currently running about two months behind the PC version.

Ultimately, the challenge Barwood and his team face isn't an easy one, but he's well prepared. Fans of the original movie series will no doubt be hoping for a faithful Indy experience, echoing the films' greatest moments, but it will be the expectations of gameplayers that will be the hardest to meet. Armed with a strong story, ingenious puzzles, masses of action, and not forgetting one of the greatest action heroes of all time, Lucas certainly seems capable of giving *The Infernal Machine* a fair crack of the whip.







Indy's signature whip is always at hand (above), yet there are plenty of other weapons should he require something a little more powerful

# Doctor Jones

**Hollywood and the videogame industry may still remain worlds apart in many respects, but LucasArts' Hal Barwood has overseen some of the silver screen's biggest stars make the transition from cinema halls to the field of computer entertainment. Indiana Jones might be a hero of what now seems a bygone age, but as Barwood explains to Edge, Indy is Indy – only this time he's in realtime 3D...**

LucasArts' Hal Barwood is no ordinary games designer. Despite having titles including *Indiana Jones and the Fate of Atlantis*, *Yoda Stories* and *Indiana Jones' Desktop Adventures* under his belt, his real experience lies in a movie career spanning 20 years. He co-wrote the screenplay for Steven Spielberg's first feature film, 'Sugarland Express', and also co-wrote and produced the fantasy hack-and-slash game, *DragonSlayer*. So how does he find working at the helm of an ambitious interactive adventure such as *The Infernal Machine*? **Edge** met up with him at LucasArts' San Rafael HQ to garner his perspective on creating videogames.

**Edge: First of all, *Tomb Raider* – are you worried about the similarity between your game and Core's?**

**HB:** I don't look at it in quite that way. I'm a big admirer of Lara Croft and the *Tomb Raider* series. I've played them all so far and I just got my copy of *TRIII* today. I think it would be silly, for example, to have a firstperson Indy game where you don't see his whip, you don't see his hat, and you really don't feel that it's Indy. I think that Indy is a natural character for this kind of game.

**Edge: How difficult was it to create a convincing digital version of the established Indy character?**

**HB:** I think Indy is Indy. He's played by Harrison Ford in the films and our version is a sophisticated 3D model – that's a legitimate Indy in the world of realtime 3D. He doesn't have quite the acrobatic skill of some of these other characters, and he doesn't throw bombs that cause magical shockwaves, like *Heretic* for example. When it comes to those kind of things, he's a little bit anaemic, but Indy has always been an academic – an intellectual as well as a man of action – and he kind of avoids everything until he gets pushed into a corner. He's kind of a shambling guy who can get himself out of trouble. That's the kind of guy I wanted to have in the game.

**Edge: Given the movie heritage, how important will cinematic elements be?**

**HB:** They're important – that's how we present the story – and the cut-scenes and dialogue will convey the dramatic parts of the story well. But I also want to say that I'm an old movie guy and I've done a lot of movies in my career, so what fascinates me about realtime 3D is that although the imagery itself is not as sophisticated as the sort of thing you can see when you watch the trailer for 'Episode One', for example [smiles], in terms of just the philosophy of it all, we've stepped beyond cinema. The player is operating in a world that is coherent.

I have nine guys off in another corner of the building, designing the chapters of the game. And they aren't building sets, they're building these little mini worlds. And you examine them, you can look at them from any angle, and they all have to work. So unlike a movie set which only works for the camera, this works for wherever the player wants to go.

**Edge: How will the limits of current 3D technology be able to compete with what's already been done with Indy in the cinema?**

**HB:** 3D technology doesn't really substitute for photography and sets and



balance when you're playing is different. So despite my story background – and I've been a writer for a long, long time – I go into short-circuit mode when it comes to games. Everything is very telegraphic compared to when I'm writing a story.

**"I have nine guys building the chapters of the game... they're building these little mini worlds. So unlike a movie set which only works for the camera, this works for wherever the player wants to go"**

so on yet, so there will be an abstract quality to our game as no one has managed to make really naturalistic-looking worlds yet. We're not really leading-edge technology anyway – we're behind the leading edge – but not too far behind. Although we work very hard at it, we're hoping to compete on the basis of the personality of Indy and by what he can actually do.

**Edge: How important do you think strong storylines are in games?**

**HB:** It used to be that stories were only found fully developed in adventure games. We're still doing them but they seem to be occupying less of a total percentage of what we do. But what I notice and what I'm proud of is that the story concept thrashed out in adventure games has migrated to other genres and now it's a very rare thing to find a game that doesn't have some semblance of a story.

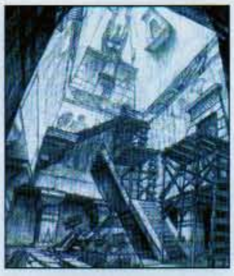
I believe in some ways that story will dominate, but I don't believe stories will ever be as detailed as they are in, let's say, a book. No one wants to sit through a story – you want to be the story. The

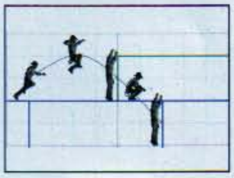
**Edge: What is the balance between action and exploration/discovery in this Indy adventure?**

**HB:** Exploration and discovery are a huge percentage of what you do, puzzling is another chunk and action is also significant – for 30 to 40 per cent of the time you will be in some kind of serious jeopardy so you'd better watch out! But it's not the kind of intensity that you'd find in *Jedi Knight* or *Quake II*, and it's not intended to be like that.

People also run at normal speeds – Indy runs at around 3m/s which is a pretty good jogging pace. Whenever I watch my friends playing *Quake II*, every now and then you'll see four frames of this guy shoot through the frame at the speed of sound. We don't do that.

I want people to feel cosy and welcome in the world we've created. I don't want them to feel that the jeopardy is so extreme that they're about to die any second like in *GoldenEye*. On the other hand, I don't want the whole thing to be so somnambulistic that your blood pressure never gets up at all.





**(Top) A team of nine designers worked out intricate sets and 'mini worlds' from every angle and, using 3D technology, took great care to make Indy's actions as realistic as possible**

# R4 – Ridge Racer Type 4

**Still bruised from an encounter with the *Tekken 3* team during its last visit, Edge returns to Namco to take on one of the company's other premier teams, as they break from the latest instalment of one of the most important contributions to the PlayStation**




Format: **PlayStation**

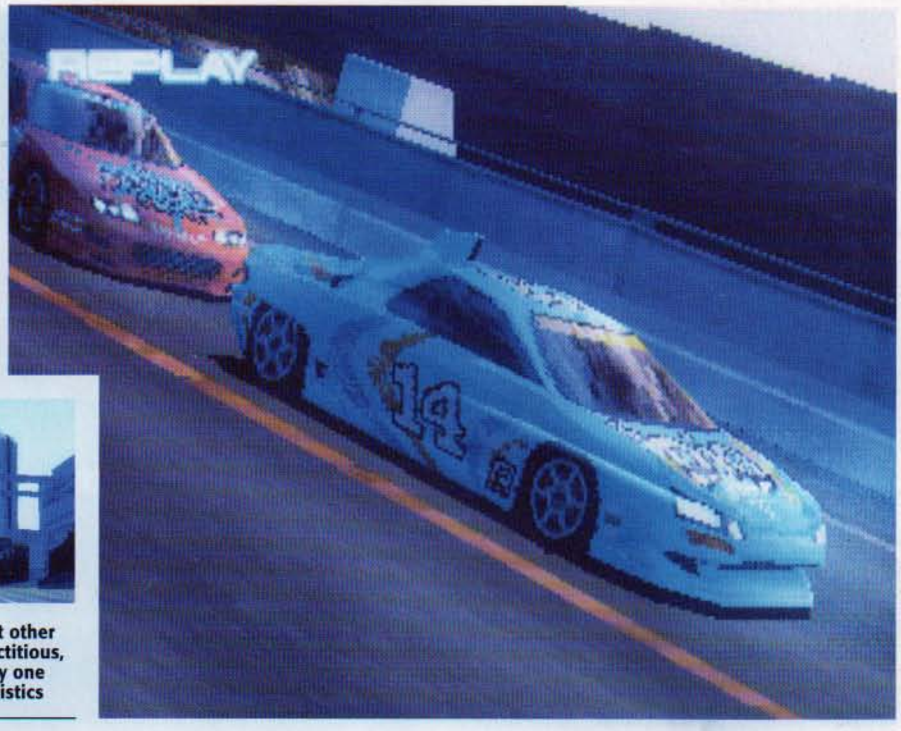
Publisher: **Namco**

Developer: **In-house**

Release: **Out now (Japan)**

Origin: **Japan**










**As if to reinforce its arcade roots, and unlike most other current racing titles, all of *R4*'s 321 vehicles are fictitious, although the team is keen to emphasise that every one of them boasts a unique set of handling characteristics**

Long before *Gran Turismo* had powerslid its way convincingly to the front of the PlayStation's racing pack, pole position had been systematically claimed by a racer with an established arcade pedigree. Namco's original *Ridge Racer* may have been lapping the track continuously for over three years, but the series' dominance over the rest of the field remained convincing.

A depressingly minute proportion of the endless convoy of contenders did get close, and as the ongoing shift towards realistic physics invaded the console racing genre, some would argue that Codemaster's first *TOCA* title may well have slipstreamed its way past Namco's finest, whose tyres had by now justifiably lost the best of their adhesive properties.

Then came *Gran Turismo*. In truth, the two games could not be further apart – *GT* epitomises authenticity enveloped within a solid, typical videogame structure while *Ridge Racer*, despite two PlayStation sequels, has refused to renounce its coin-op heritage, continuing instead to offer all the realism of Scalextric. They are clearly travelling on two very different, and very separate roads…

## Fast and furious

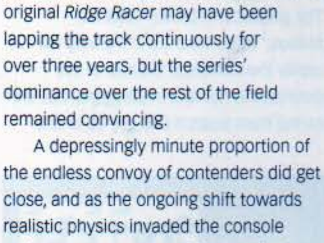
*R4 – Ridge Racer Type 4*, the latest in the series to adhere to the latter ethos, is as likely to make friends among the realism brigade as *GT* must have done when it first ram-raided the arcade community. It has taken a team of 30-plus, full-time individuals (most of whom have previously lent their talent to the first two PlayStation incarnations of Namco's coin-op racer) 19 months to get this far. The result is fast. Unrealistically fast, in fact.

> "We included a total of 321 types of car. We wanted players to enjoy R4 as many times as possible and have therefore included as wide a variety of cars as we could" Motomi Katayama

"Essentially, we haven't made a simulation but a racing game," emphasises a cheerful **Motomi Katayama**, the game's director. "Our reasoning stemmed from the fact that when you are driving a car, factors such as G-force from cornering, accelerating and breaking, or the level of tyre grip, are communicated via the steering wheel and the vehicle's seat – none of these can currently be simulated adequately within a videogame setting, so we've concentrated on making sure it is a game."

This, within a genre that is balancing ever more authentic dynamics with playability, is a brave stance. *GT* was a defining moment for PlayStation racing titles, but *Ridge Racer 4* steers confidently away from realism towards gameplay by including a staggering amount of totally fictional vehicles. Katayama-san maintains there is a perfectly logical explanation.

"We included a total of 321 different types of car. This number was required in order to implement the gameplay aspect





**In the garage mode you can customise every aesthetic aspect of your car in more detail than *Revolution* allowed**












In VS mode (a new addition to the series) the rear-view mirror is missing in an attempt to maintain a healthy framerate. As in *TOCA 2*, link two 32bit machines together for fourplayer action

that we wanted," he states. "We wanted players to enjoy *R4* as many times as possible, and have therefore included as wide a variety of cars as we could."

Surely, though, there is more to crib from one of the greatest driving games of all time than just the need to include a huge collection of vehicles boasting an impressively wide range of handling characteristics? And while Katayama is adamant they weren't inspired by other

**"The graphical improvements are obvious – the way we display the buildings, the size of the textures, the number of polygons... *R4* looks totally different"** Kazutoki Kono

titles as far as game content was concerned (quite the opposite, in fact, as the team looked at things that hadn't been incorporated before), there must have been a game whose development the team took an interest in...

"Of course, from a programming point, *Gran Turismo*, but no other title, I think," concedes programmer **Masatoshi Kobayashi**. "It's the same for the graphics, really," adds **Kazutoki Kono**, the project's graphic art director. "Initially, I looked at several racing titles for research purposes as well as other non-racing games. In fact, the sky in *R4* is inspired by the latest *Ace Combat* – usually, there's no better 'sky' in games than that found in flight combat games."

Given the quality of the visuals, it's perhaps natural to discover that they were responsible for the most headaches during the development period.

"The graphics were made first, so, occasionally, it was particularly difficult to implement them into the game," explains Katayama-san. "I had many discussions with the designers in an attempt to find a way of simplifying their work in accordance with the PlayStation's processing power. They certainly piled on the pressure."

## Looking good

"The graphical improvements are obvious," adds Kono-san, "the way we display the buildings, the size of the textures, the number of polygons, etc. We started from scratch and got rid of any




The graphical detail evident in *R4* exceeds what only a year ago many would have thought possible to achieve from Sony's five-year-old 32bit machine












**In addition to a second CD showcasing other forthcoming Namco PS products (including a playable *Ace Combat 3* demo – see p30), *R4* will also offer a bonus disc featuring the original *Ridge Racer* in both standard and enhanced, 60fps form (above)**

superfluous material, which is why, despite running on the same hardware, *R4* looks totally different from the previous *Ridge Racer* titles. It was difficult."

As one of the members originally involved with Namco's first PlayStation racing outing, Kobayashi-san is more than aware that things have certainly moved on.

"When we released *Ridge Racer*, we honestly believed we'd got the best out of the PlayStation and reached some of the machine's limitations, which is why, from a technical standpoint, I didn't want to develop *R4*! But it was a case of eliminating any waste and making full use of the PlayStation's ability to display polygons."

Presumably, this was a job best suited for the famed Performance Analyser. By scrutinising *R4*'s code with the development tool, Namco's team was able to locate routines that could be improved, and then faced the daunting task of maximising their potential. The end result is inspired.

"There is currently no other **racing game where the background,** the road, the cars – almost everything, **in fact – is entirely Gouraud shaded...** We managed to achieve everything **we wanted"** Motomi Katayama

## End in sight

Eventually, Katayama-san points out some of the advantages of having used Sony's development tool. "There is currently no other racing game where the background, the road, the cars – almost everything, in fact – is entirely Gouraud shaded," he proudly states. "When I first talked about it with Kobayashi-san, we thought it impossible, but we eventually managed to squeeze in environment mapping, headlight effects, transparencies and Gouraud shading. In fact, I think we managed to achieve everything we wanted."

With the end very much in sight, Kobayashi is no less enthusiastic.

"For certain projects, we occasionally discover during the development period that there are things that simply cannot be done... but for *R4*, we were successful in implementing everything that was in the original design document."

Expect a review next issue.







**Grand Prix, the game's main mode, sees you looking for a drive with one of the various teams. Your career then relies solely on your driving skills**







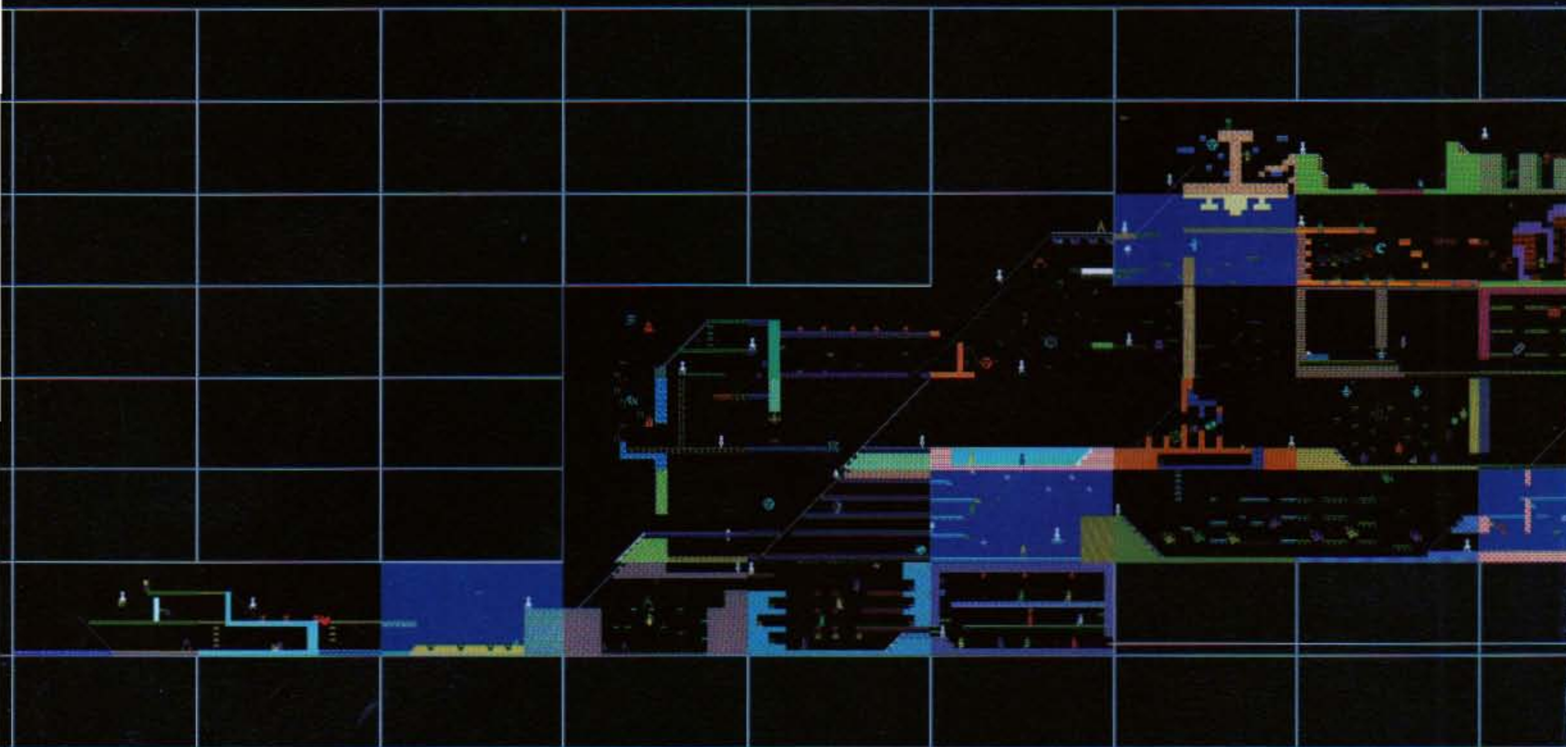




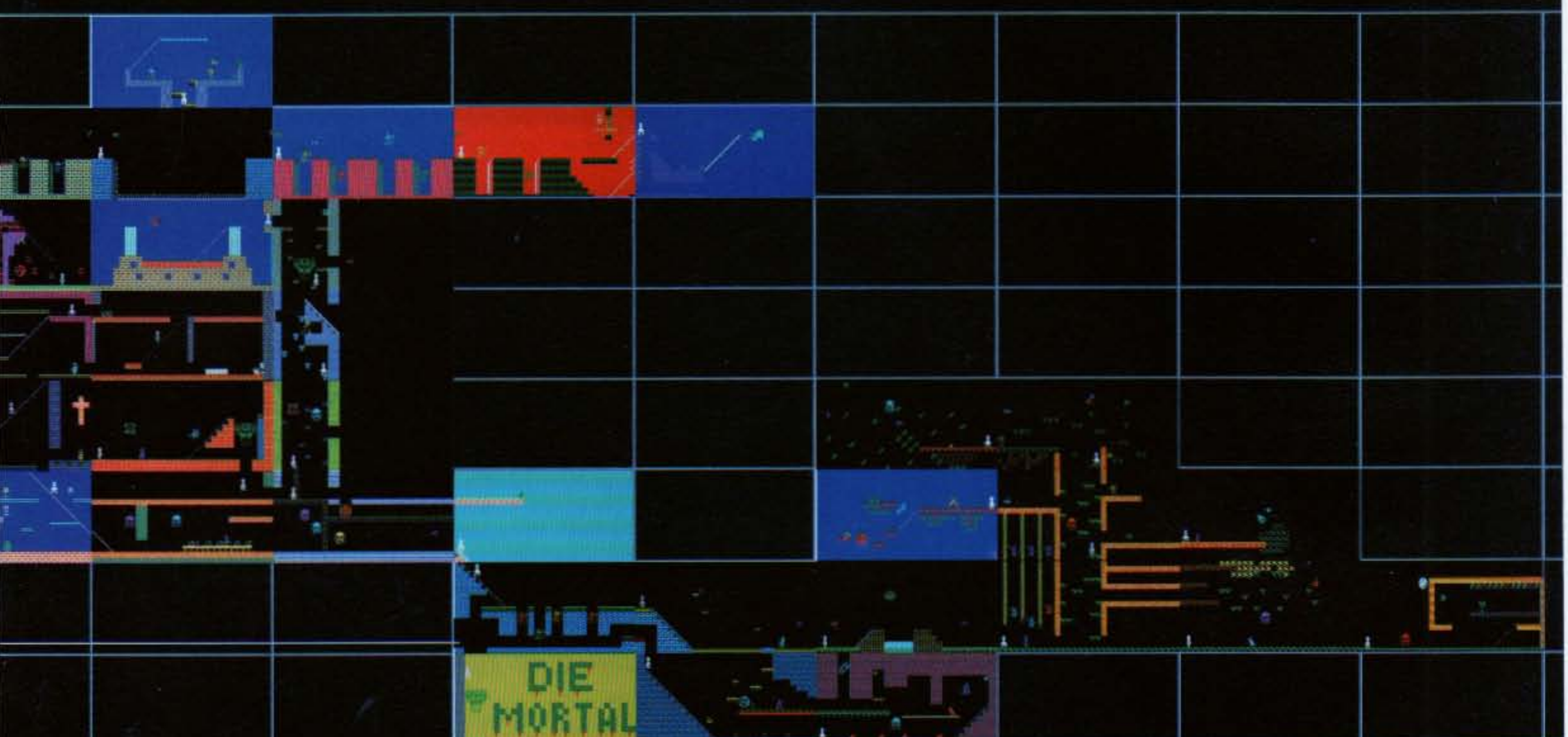
**After 19 months of hard work and numerous headaches, every aspect of the original design brief has been implemented in *R4* largely thanks to this group of supremely talented individuals (from left): director Motomi Katayama, programmer Masatoshi Kobayashi, graphic artist director Kazutoki Kono, sound designer Hiroshi Okubo, CGI designer Kei Yoshimizu**

# THE LAND THAT TIME FORG

**Remember when game worlds looked like this? When environments were built from bitmap images pieced together like building blocks, and polygons were the preserve of geometry students? Edge does. But what happened to the 2D game? Who was responsible for its demise? And does its passing mark the end of another golden era? Edge investigates**



# T




When the human race realised that the earth was not flat at all, but in fact a globe, the ensuing contribution to sciences, geography and even the arts was remarkable. In some respects, the rise of 3D graphics in computer and console systems is akin to this, bringing more realistic, more believable game worlds to a pastime whose status as a billion-dollar commercial enterprise began with two bats pinging a square 'ball' back and forth on a resolutely two-dimensional plane.

Where this metaphor falls down, of course, is that it fails to relate the continued importance of believing that the gaming world *can* be flat.

As Renaissance painters once experimented with perspective within their works, modern videogame developers broaden technical horizons with successive releases. For 3D gaming's practitioners, the learning process has only now truly begun. But does this, in effect, signal the death of 2D? Is 2D no longer a commercially lucrative medium? Has 2D reached obsolescence by fulfiling its potential to its absolute limits, or are modern trends expediting an ignoble, unceremonious early death? Over the next seven pages, **Edge** looks for the answers.

## WHEN 2D GAMES ARE BETTER

*"Some games are better in 2D, particularly puzzle games, and also some platform games. Although there's a lot more you can do with 3D where you've got a full world you can roam around, there are some specific character movements – like jumping, and judging where you're going to land – that are actually easier in 2D than in 3D."*

***Jez San, Argonaut***





**They may be driven by entirely different engines, but the *Street Fighter* and *Virtua Fighter* series have more in common than appearances suggest. A case of 3D for the sake of it, then**

It's hard to dispute the fact that certain games – and, arguably, a few genres – are less appealing in 3D. Reduced to their constituent elements, most polygon-based games retain the creative mainstays inherent to their sprite-based forebears. So, with the introduction of an additional dimension, developers acquaint a 2D design brief with a variety of complications. From camera angles to collision detection, it's a complicated process. And certain features just don't survive the transition between the two mediums.

**"*Bomberman* in a 2D perspective, that was a great game. It was so simple, and so accessible, so easy to get into that when it was 'converted' to 3D, it was a bit sad. It was like seeing an old friend fall by the wayside..." Peter Molyneux**

The 'update', that enduring cash cow of the industry, perhaps best illustrates the shortcomings of 3D where many simple, traditional gaming concepts are concerned. For Probe's director of communications, **Joe Bonar**, a Midway classic demonstrates one particular example. "Remember *Defender*? Could you do a 3D *Defender*? I don't think it would work so well. You've got to be able to see behind you. If you can't, you've lost part of the original's appeal." Essentially, it would be impossible to create a modern, 3D reiteration without altering the original concept. Would *Defender*'s simple, compulsive 'twitch' gameplay survive that process? Of course not.

*Tetrisphere*, too, articulates a clear message to the puzzle-game developer. *Tetris*, despite its humble roots, remains the world's most successful game. Its role in Nintendo's success with the Game Boy is irrefutable. A 3D sequel, then, would have been deemed by NCL executives to be an important title. But, to be frank, *Tetrisphere* fails utterly in its attempt to reintroduce the *Tetris* theme to a new, polygon-hungry audience. "The Game Boy version of *Tetris* is the definitive version," reckons DMA Design's **Brian Baglow**. "There are some ideas that need the 2D treatment, and putting them into 3D just isn't the same."



**Could *Defender*'s simple gameplay be translated into a 3D environment? Probe's Joe Bonar is unconvinced**

### 3D for 3D's sake

"3D is great for some things," offers Lionhead supremo **Peter Molyneux**. "It's *really* great for things like firstperson shoot 'em ups. But some things have been tried, where they've attempted to put something into 3D that was much, much more comfortable in 2D. The example that springs to mind, and I only played it very, very briefly, is *Bomberman 64*. *Bomberman* in a 2D perspective, that was a *great* game, and I played it loads and loads and loads. It was so simple, and so accessible, so easy to get into that when it was 'converted' to 3D, it was a bit sad. It was like seeing an old friend fall by the wayside..."

That's just three examples, a trilogy of instances where even the most polygon-obsessed gamer would have to concede that the sprite-based original was, and remains, better. But there's another, entirely subjective aspect to any 2D-over-3D argument.

"The thing about a 3D world that's so great is that when you're designing it, you can think 'Oh well, I can move the camera over there, over here, over there...'," says Peter Molyneux. "It's a lot less 'forced' than a 2D world. It allows you to design far more ambitious games, but you sacrifice the simplicity and often the purity of a simple interface, and simple graphics."

Where 'simplicity' and 'purity' are concerned, Capcom's *Street Fighter* series has few peers. It continues to eschew the convoluted pad sequences of the *Tekken* and *Virtua Fighter* series in preference of an instant, wonderfully balanced series of specials and simple punch-kick combos. Its collision detection is well-judged, and consistently believable. It's difficult to say that *Street Fighter* is better than its 3D rivals as such, but it *is* a markedly different, equally playable 2D alternative.

It's noteworthy that many purists scoffed at the 3D *EX+ Alpha* incarnation of *Street Fighter*, with comments to the effect that it seemed less responsive, less enjoyable, less 'crisp' than its original form. By contrast, the 'mainstream' PlayStation punter – and consumer press – lauded and loathed it in equal measure. Horses for courses? Almost certainly.

"I personally think *Super Mario World* is better than *Mario 64*," opines Argonaut's **Jez San**. Creator of 3D games for over a decade – long before the advent of dedicated 3D hardware – San is a fierce advocate of 3D's modern dominance. But can he genuinely believe that a 2D SNES game overshadows its 3D successor in gameplay terms? "Now *Mario 64* is a good game, but the one I spent months of my life playing, all hours, day and night, until it was totally complete, was *Mario World*."

## WHEN 2D IS PERCEIVED AS INFERIOR

*"With the videogames press, there's almost a cock-waving thing: 'We like this, because this is the next cool*

*game!' So* Unreal *gets 90 pages, and then* Half-Life *gets the same. But it's not the done thing to shout about a 2D game. If it wasn't so tragic, it would be funny."*

**Brian Baglow, DMA**

It's not just marketing departments and developers that preach a 3D gospel – the videogames press is also part of the loop, a metaphorical noose for the neck of 2D gaming. Peter Molyneux believes that there are few descriptive terms to describe gameplay – that, perhaps, you can isolate constituent elements, like levels or genre, but to communicate the concept of 'gameplay' is a difficult task. The terms, words and phrases required have never been definitively coined.

This is, in many ways, a damning indictment of the consumer magazine market. Dedicated console magazines, in particular, can often make awkward reading for the videogaming connoisseur. How is it that the majority of gameplay-summarising copy is a variation of the 'If you like this sort of thing' cliché, yet there are innumerable ways in which reviewers berate a game for 'not being 3D'? Such is the lack of perception in some quarters of the specialist press that it's even possible to discover an 'expert' criticising the polygon-based beat 'em up *Mortal Kombat 4* for 'not really being 3D – unlike the *Virtua Fighter* series.'

## All for show

Developers, too, appear to have little time for the sprite. "There's so much more kudos in producing a 3D game than a 'cheap' 2D game within the industry," offers Peter Molyneux. "To be honest with you, if you're demonstrating a product at a show, and you've got a really, really *fun* 2D game – y'know, a non-'engine driven' game – it's so much harder to demonstrate it at somewhere like E3 or ECTS. You've got everyone crowding around the latest 3D special effects XYZ God-knows-what, and there's your game – which isn't using any great technology – and where do people go? It's so much easier to say 'Look at this amazing effect!' than 'Look at this amazing gameplay!' You just can't do the latter at a show."

From a marketing perspective, there also seems to be little incentive to invest heavily in a 2D project. The tale of Activision's sprite-based *Dark Reign* and Cavedog's *Total Annihilation* perhaps best illustrates why publishers are reluctant to dedicate resources to inherently two-dimensional design briefs. Generally reviewed a month before its poly-pushing counterpart in UK PC magazines, *Dark Reign* was showered with accolades. And, yes, various iterations of the 'Better than *Command & Conquer*!' line appeared in print. A month later, *Total Annihilation* was given a similar, though more enthusiastic treatment. Both games hit the shelves shortly afterwards, and need the outcome be related? As a footnote, it's worth taking into account that a number of PC magazines have since suggested that, in terms of actual ingame features, *Dark Reign* is the more sophisticated of the two. The punter, however, remains unconvinced. Was *Total Annihilation*'s success largely due to its use of polygonal units? It's a disquieting thought.

Jez San recognises this phenomenon. "I don't think the 2D game is dead," he says, "but, obviously, we're going through a phase where almost every game that could be done in 2D is being done in 3D. If you tried doing it in 2D, it might not sell as well, even if it's a really good game. People's expectations have changed – they want everything in 3D. I don't think 2D games are inferior, but I do think their graphics are. There's obviously something about having a three-dimensional world that just looks better. It feeds on people's sense of spatial awareness, and gives them an extra challenge, because they have to be imagining how the world fits together."




**The love affair between press and polys continues apace, although *MK4*, a timely poly-based sequel, didn't impress**

**"At DMA we've got a few people who will look at a game, and if it's not 3D, they're not interested. They won't even take the time to look at it properly. I think that's a trend that seems to be pretty much universal at the moment" Brian Baglow**

"I think it's a shame that there's this perception that 2D games are dull," laments Brian Baglow. "I mean, even at DMA we've got a few people who will look at a game, and if it's not 3D, they're not interested. They won't even take the time to look at it properly. I think that's a trend that seems to be pretty much universal at the moment."

## 2D: THE DARLING OF THE RETRO FRATERNITY

*"If I showed a 2D game like* Super Metroid *to a group of kids, none of them would buy it. They'd be like: 'What's all this retro crap?'"*

***Joss Ellis, Virgin***

Although retrogaming's take on geekish chic remains more Johnny Ball than Jarvis Cocker, the appeal of the emu is massive. For some, an emulator is a desktop toy, a plaything for work hours *sans* work. For others, it's an opportunity to rediscover past favourites, with the age of a title and its modern day acceptability having a strange inverse relationship (although there are, of course, a few notable exceptions). For the enthusiast, though, old games compete with new releases for a share of waking hours.

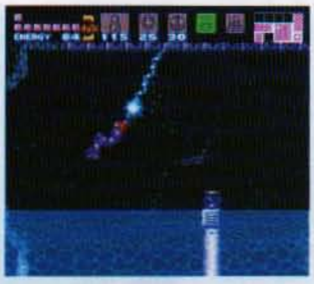
It's a disappointing reality, but the predominantly 2D games of yesterday often don't bear close examination well in the late '90s. This also applies to one-time favourites and, in principle, seminal classics. "Unfortunately,





**The realtime strategy game is, arguably, a genre suited to sprite-based engines, although the poly-based presentation of *Total Annihilation* (left) saw it garner more attention than *Dark Reign* (right)**






**Is *Manic Miner* (left) really unplayable today? The more recent *Super Metroid* (centre) certainly remains a sublime gameplay experience, while Capcom is coining it today with a series of old coin-op re-releases**

it's like old films," says Peter Molyneux. "You fondly remember them, but the world completely changes and puts them out of context. I mean, *Manic Miner* – I remember it well, and I thought, 'Ah, what a brilliant game!' I went back and played it years later and

**"I think it's sheer optimism to think that 2D games will come back. It's been and gone, and we all remember it – and some of my favourite games were 2D – but I can't see it happening again. I don't think the market will let it happen" Jez San**

thought, 'This is just *awful*! I can't play this!' And it was a shock, a real shock."

The opposite applies, too. Indeed, it's almost embarrassing to look at a Nintendo game over a decade old possess a greater level of creative integrity than a PlayStation equivalent today. Although many developers and software houses seek to distance themselves from their 8bit and 16bit heritage, almost every publisher has at least one title that could justifiably receive a present-day reworking. Some games, such as the SNES classic *Super Metroid*, would almost certainly find favour with today's switched-on gamers, even if presented in their original form. It's a contentious point, but there are 'forgotten' 2D games that have a potentially greater claim to shelf space than the slew of shoddy, poly-based dross released this year. "The amount of people here that play emulators rather than current games is huge," reveals Brian Baglow. "You've got many, many people playing emulators rather than going out and buying new games like *Half-Life* and *Sin*."

## Retro chic

Commercial, 'mainstream' retrogaming is a strange market. Packages like Williams' *Arcade Classics* and the Capcom *Generations* series tweak the heart strings of gamers as a prelude to the tugging of purse strings. And, in certain instances, they enjoy a relatively high level of success. It's hard to say if their appeal is, at least, a partial vindication of primitive 2D – the people who purchase them are aware that they're aesthetically inferior to modern releases, after all – or an indication of the impact a videogame can make, irrespective of its era of origin.

## 2D as a 'new' concept

Psygnosis has just re-released a port of *Lemmings* for the PlayStation," says Baglow. "Now, some people have said, 'Ah! An absolute classic!' And then you've got the other half, who say, 'What the *fuck* is this? This is awful!' In some magazines, they've marked *Lemmings 3D* higher than the original *Lemmings*. It seems that the people who played it years ago, on the PC and Amiga, are the ones who like it..."

This raises an interesting point. Could it be that today's gamers have to somehow 'learn' to enjoy 2D? Could it be that 2D games are almost too abstract for the coveted mainstream gamer? Does 2D need a killer app to reintroduce itself to the massmarket?

Single-screen, multiplayer gaming is an area in which 2D has an impressive track record. In this instance, cartoon-style bitmaps and a fixed viewpoint could be a positive boon. For inspiration, designers need only cast their minds back to history's many examples. "There are old games that I do still play in 2D, and they're still absolutely brilliant," enthuses Peter Molyneux. "Games like *M.U.L.E.* on the Commodore 64 – it's excellent. But that's not because it's 2D or 3D, it's because it's very, very primitive, and a great idea for a multiplayer game."

## Market forces

"All these people say that retrogaming is coming back in, that it [3D] is just a phase, and we'll be back to 2D... I really don't think so," argues Jez San. "I think it's sheer optimism to think that 2D games will come back. It's been and gone, and we all fondly remember it – and some of my favourite games were 2D – but I can't see it happening again. I don't think the market will *let* it happen."

"If you can suspend the player's disbelief, get them involved, then whether it's 2D or 3D just doesn't matter," offers Joe Bonar. "Take *Pac-Man*. It was a 2D game, and you used to shit yourself – you really used to react when you were being chased. There was an emotional response, even though it was 2D." The gulf between *Resident Evil* and *Pac-Man* is huge, both in time and appearance. Yet both, in their own respective ways, have engendered tangibly similar responses from engrossed gamers. Can sprites evoke similar feelings in the '90s? The dedicated retrogamer would argue they already do.

## PRETTY POLY: THE DEVELOPER'S NEW FANCY

***"I reckon, and this is purely a theory, that if you took the average game from ten to 15 years ago, it would have taken around two, three months to complete. Ninety per cent or so of that time would have been dedicated to gameplay. I'd say that exactly the same amount of time is spent on gameplay and balancing now, but the projects can take over two years. But the vast majority of that time is spent on the graphics, the 3D world and trying to get your interface right.***





**They may be poles apart technically, but Joe Bonar points out that *Pac-Man* and *Resident Evil* inspire the same responses – they both 'scare the shit' out of players**

*You're left with the 11 or so weeks at the end to put the 'game' in."*
***Peter Molyneux, Lionhead***

Development teams have embraced 3D with an almost religious fervour, some would argue for little reason other than they can. On this topic, Joe Bonar makes an important contribution: "The reason why 2D games proliferated in the past was because you could only *do* 2D games. 3D games were hard to produce, and before you had all the hardware to manage it for you, you had to be Jez San to do it…"

Of course, the transition from simple, sprite-based routines to complex poly-pushing code has seen the bedroom coder consigned to distant history. While it's possible for an individual, like Peter Molyneux, to possess a near-complete degree of creative control over a project, the one-man development team can now barely aspire to producing 'decent' shareware. "I'm sad to see 2D games go," says Molyneux, "because I think we'll see far less simple, easily accessible games. The saddest thing for me is that it's further taking games away from the time where you could just 'knock one up'. No one would ever think you could do that these days.

"It's the ability to have a really good idea for a little puzzle game, or something like that, and then be able to code it up in a couple of weeks. When you're starting out in the industry, it's really important to be able to do that. Now, of course, we're dealing with cameras, 3D worlds and interfaces, and, from that perspective, it's sad…"

Joe Bonar agrees that the days of development periods being measured in weeks are a thing of the past: "It was once easier to mass-produce games. I think there used to be a joke in the industry: If Probe are doing a game for a company, the spec is 'How many platforms do you want in it?' Essentially, what we did was to create a set of tools which allowed us to produce 2D games very, very easily. It was called CRISP, and was programmed by Carl Miller. That allowed us to program games such as *Stargate*, *Judge Dredd*, *Pagemaster*… Oh God, these are all bad games! But they were all done on time."

The idea that even the most simplistic contemporary 2D game could be completed in weeks is ridiculous. In its own way, the gestation period of a 2D game can be as protracted as that of a poly-oriented equivalent. Nintendo's *Yoshi's Story*, for example, was the result of many, many months' work, its production values were no less stringent than the current crop of 3D platformers.

## Blinded by ambition?

In some instances, developers are attempting to be too ambitious with 3D games. One example of this can be found in the realtime strategy genre. Westwood's *Command & Conquer*, for instance, illustrates how a 2D game provides a consistently clear, precise view of the action at hand. Disregarding the import of *Total Annihilation*'s polygon-based units for the moment, consider the *next* evolutionary jump for this game style: the introduction of a firstperson perspective. Although many would argue that Activision's *Battlezone* and Microsoft's *Urban Assault* are a different 'style' of game, their roots are firmly grounded in realtime strategy principles.

"Sometimes, it's the difference between good design and bad design," states Virgin's VP of production, **Joss Ellis**. "You've got developers saying 'Let's have more units, massive landscapes, waypoints, preprogrammed functions,' and they're just adding complexities for the sake of it. You're making entertainment software, not a military-issue combat sim." Indeed, one palpable flaw of both *Urban Assault* and *Battlezone* is that, by combining strategy with combat elements, they could overburden the one piece of PC hardware that can't be upgraded – the player. As many codeshops labour under the misapprehension that 'bigger' and 'more' equate to 'better', there's a genuine danger that successors for both games will alienate players with hugely over-taxing rules and features.

Of course, market forces will always prevail at such a point – Darwin's theories of natural selection are applicable in a software retailing sense, too – but there's obviously an upper limit to the abilities of the solitary gamer. Create *Urban Assault* in 2D, however, and the concept as a whole becomes more approachable. Rather than clumsy map overlays or distracting strategy screens, gameplay issues and tactics can be addressed from a fixed view. The player isn't required to utilise their sense of spatial awareness, so the additional thought processes required to negotiate a 3D environment can be 'spent' elsewhere. Both *Battlezone* and *Urban Assault* are excellent games – but could they be more enjoyable in 2D? It's an interesting question.

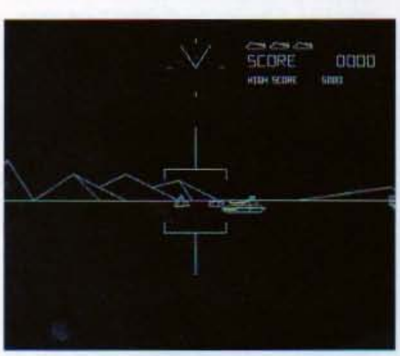
## Quality control

In terms of quality control, the 2D game will almost customarily be superior to its 3D kindred. Even the most well produced and tested 3D games are released with graphical glitches and inconsistencies, from pop-up to polygon glitching or warping. Peter Molyneux looks to the cinema for a suitable analogy. "An example would be sound. You had black-and-white films, and then suddenly they had sound. And all the disasters, the laughable things that happened when they

**"We're not worrying too much about what the lay person might think, like 'That looks terrible – her legs have just gone through the side of that door…' We're not worrying about that because we want to be more ambitious" Peter Molyneux**



**The relative commercial failure of *Yoshi's Story* could well have closed the door on 2D games from Nintendo**






**Is there an aspirational aspect to the proliferation of 3D games? Regardless of wireframe (*Battlezone*, left) or filled-poly (*Urban Assault*, right) graphics, coders aspire to be the best**

introduced sound for the first time is similar to how it was with 3D at first. We're trying to leap ahead of ourselves and trying to be so ambitious and not worrying too much about what the lay person might think, like 'That looks *terrible* – her legs have just gone through the side of that door…' We're not worrying about that because we want to be more ambitious."

Ardent, pro-2D fanatics should know better than to make this a rallying cry for their cause, though. "It's rather like when you used to have multiplexed sprites on the Commodore 64," says Molyneux. "It used to support about seven or eight, I think, and then some mad bastard worked out a way of getting more and more sprites on there, but occasionally they'd flicker. We forgave it, because there were 200-odd sprites onscreen, or whatever. But if you ever saw that on the PC or consoles now in a 2D game, you'd think 'Oh, bloody hell, that's not very good'." In many ways, then, the PlayStation's propensity for warping textures is a '90s equivalent of the Spectrum's colour clash. "Really, we know these problems are just going to go away in the next year or so," says Molyneux. "And then, when you do see a game with polygon clashing, it's going to be laughable."

### What's in a game?

Obviously, the biggest difference between most 2D and 3D games is the sheer amount of time it takes to create an engine for the latter. "When you were programming games in the past," says Peter Molyneux, "you'd do the graphics, or a friend would do them, but all the visual stuff was over and done with in a week." Now, of course, the time frames involved are considerably larger. It's notable, however, that many of the people providing polygon skins and textures are often the same individuals who once hand-animated sprites and built backgrounds with Lego-like bitmaps. Joe Bonar appears surprised by the enquiry as to whether the 3D revolution might





**Two different genres, two different appearances. Yet which one would be considered the most technically proficient? Take gameplay into account and the distinction is not as pronounced**

have led to Probe discarding old-school graphics talent. "No!" he exclaims, "We trained them! You still need 2D art to make a 3D game. We did have to hire a lot of people with 'traditional' 3D skills, though. But we had this cross-pollination of abilities, where the art people taught the 3D people, and the 3D staff taught the art staff."

## 2D IN THE MODERN DAY

*"Although we designed the Super FX chip mainly to do 3D on the SNES, Nintendo used it very successfully for one of the best 2D games of all time –* Yoshi's Island. *It was used for the sprite rotation and scaling, which is quite a high graphical technique, but they used it in a very two-dimensional way."*

***Jez San, Argonaut***

Isn't it ironic that the 2D platform game – once a woefully over-subscribed genre – has, in a matter of years, become almost a 'niche' product? Likewise, the old-school shoot 'em up is another gamestyle blighted, in the west, by a dearth of interest from the mainstream market. Even the graphic adventure, once a genre beloved of the programmer keen for a quiet life, now plays a far from pivotal role on the modern software retail shelf.

Can a 2D game succeed today? It's a thorny question. During the PlayStation's early years, the development fraternity was awash with rumours that Sony would, had, or might 'reject' a 2D game on the basis that it was 'off message'; if it wasn't a 'progressive' 3D title, the company's support would be, by means of implication or overt refusal, limited. Similarly, the rise of PC 3D has seen the high-end gaming market adopt a cautious approach to sprite-based titles. The continued success of Westwood's *Command & Conquer* series and the likes of Interplay's *Fallout* – a 2D, isometric-viewed RPG – make the PC a format where 2D can thrive in a limited sense. But will it ever compete with the likes of *Half-Life* and *Unreal* for magazine covers? To a large extent, absolutely not. But there *is* one recent, notable exception.

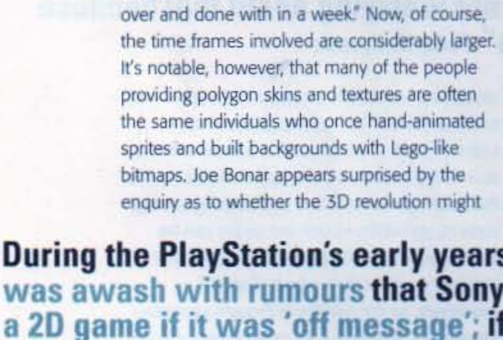
"We're saying things like 'Wow, you can rotate it around! How cool!' or things like 'That character's made up of 300 polygons!'," says Peter Molyneux. "I mean, does *anyone* who plays games, who might not appreciate that fact, give a shit about it? No, they don't. And why should they?

"We have quite a few kids in here to test *Black and White*, and I always ask them a few questions about games. One in particular was 'What graphics have you seen in a game that you thought were brilliant?' For the last few weeks, a lot of them have been saying *Commandos: Behind Enemy Lines*, and there's me saying 'Well, yeah, *Commandos*. But that's not fair! That's just pictures!' and they're saying 'Yeah, but it still looks completely brilliant!' It's not 3D in any way – just fixed isometric – and that brings the whole point home. While polygons still look like polygons and they still look 'techy', whilst we can appreciate it and say it looks great, if the end result doesn't give you a playable game – or something that's not as realistic as an equivalent drawn by hand – then we've still got a long way to go."

### Exception to the rule

Could it be that the market doesn't actually care about polygons? Is it plausible, as *Commandos*' success implies, that bitmap-driven games can top charts ahead of 3D-based equivalents? *Abe's Oddysee* is one of a precious handful of high-profile 2D platform games released in recent years. For developer Oddworld Inhabitants, it was a pleasingly successful debut. Both games,

**During the PlayStation's early years, the development fraternity was awash with rumours that Sony would, had, or might 'reject' a 2D game if it was 'off message'; if it wasn't a 'progressive' 3D title, the company's support would be limited**



**Although Argonaut's chip was created to assist with 3D, *Yoshi's Island* uses the Super FX to great effect with 2D**

on their respective 'target' formats, are the exception rather than the rule. But should it be that way?

Has 2D, in truth, realised its potential? Did *Yoshi's Island* represent the pinnacle of 2D platforming gaming? The dedicated gamer would probably argue in the negative. Is there potential, then, for a developer to create a massive 2D platforming hit for the current (or forthcoming) range of consoles? Jez San is unconvinced: "Effectively, Miyamoto tried that with *Yoshi's Story*, and that's two dimensional with 3D effects. For better or for worse, it didn't do so well. I wouldn't say it flopped, but I think it was a disappointment in many people's eyes, compared to the original. I don't think that anyone is brave enough – not even Miyamoto – to do a 2D game again. Even if you can do some gameplay elements that are better in 2D, the market wants things that are visually stunning – and that means 3D, and more and more special effects."

## 2D AND 3D: FLIP SIDES OF THE SAME COIN?

***"What it's all about for me is getting your message across. Whether it's 2D, or 3D, it's the experience. I know it sounds all arty farty, but it's all about the game."***

***Joe Bonar, Probe***

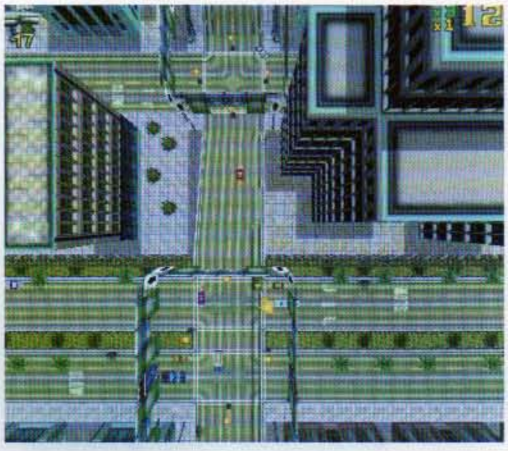
For those raised on a diet of sprite-based games, the current trend of developers using polys for quintessentially 2D game designs can be baffling. Is it a good thing, or a bad thing? "It depends what they're using the polys for," says DMA's **Gary Penn**. "Polys are much better for space, for a start, and they're also a lot more flexible than sprites. It can often be easier to have a poly-based model than to have someone hand-draw and animate several thousand frames of animation."

Does the addition of polygons automatically make a game '3D'? No. If a fixed camera is utilised, and play occurs on a flat plane, the game remains 2D, broadly speaking. A simple example is Cavedog's *Total Annihilation*. To offer *Grand Theft Auto* as an example is a little more radical, as, while 2D at heart, it uses polygons to great effect with its scenery to convey a feeling of realism and movement. But if *GTA* is to be described as 2D, does that mean that Crystal Dynamic's *Pandemonium* – despite its dynamic roaming camera – should be similarly categorised? There are no hard and fast rules, and it would be rare for two gamers to entirely agree on the subject. But one thing is certain: the sprite has fallen far from favour...




**_Total Annihilation_ traded sprites for poly-based units, setting a trend in motion**

"That's the irony," says Gary Penn in reference to *GTA*'s inherently 2D design. "The cars are actually two polys with a texture on. They're not sprites but, technically speaking, they might as well be." This is hardly a passing fad for the industry. Indeed, it's a standard, with sprite-based games becoming increasingly rare. The classic 2D 'countenance' may be in a terminal decline, but 2D gaming concepts live on.



**Despite its polygonal locales, _GTA_ is inherently 2D in gameplay terms. Is this how '2D' will continue to exist?**

**"There were a number of people – and not just consumers, press as well – who said 'Oh no, you've got to make [_Grand Theft Auto_] 3D.' And you go 'No, no! We've made it 2D for a reason.' The 2D, and the styling of the game, works" Brian Baglow**

"Sometimes, a 2D representation of a game is the way to go, instead of just doing 3D for the sake of it," says Brian Baglow. "*Grand Theft Auto* is obviously a very good example that's close to our hearts. There were a number of people – and not just consumers, press as well – who said 'Oh no, you've got to make it 3D.' And you go 'No, no! We've made it 2D for a reason.' The 2D, and the styling of the game, works."

### In the name of progress

But it's not only market forces that make the 3D styling of otherwise 2D games an inevitability. With forthcoming consoles and PC accelerator cards boasting huge increases in 3D performance, could there be a point where most formats will be simply incapable of handling a cutting-edge sprite engine? "If you look at the trends," says Jez San, "and what the hardware's built to do, the consoles and PC accelerators are all built to do 3D, and the next generation more so. More polygons, more special effects, more this, more that... *perhaps* the PlayStation 2 will render curves. And if it does that, it's still three dimensional. I just don't think 2D games are going to be anything other than a curiosity."

"If you get a load of programmers together," confides Peter Molyneux, "they never talk about the latest 'cool' gameplay idea, they talk about 'What's the latest 3D technology? How many polygons can it push on screen? Are you doing mip-mapping? Are you using polymorphic textures?' That's what we all talk about.

"We kind of forget that what we're *supposed* to be talking about is what cool gameplay innovation we've come up with. But I don't think we've got the terminology for that. There's not the language. All I can say is 'Well, I've got great gameplay in my game,' and there aren't the specifics like 'Well, I've got X number of polygons in my games.' You've got to remember, there are an incredible number of conferences, books and academic papers on 3D, and programmers look at these and think, 'Wow! Wouldn't it be great to have that in a game!' It's largely driven by ambition, by kudos within the industry. That's probably quite a contentious point there..."

So is 2D gaming, as a traditional sprite-oriented discipline, effectively condemned to disappear? Are 2D games, fundamentally, dead? "No, they're not," argues Joss Ellis, "because the gameplay is what really matters. 2D? 3D? It's not important. Did hand animation disappear with the advent of the camera?"

## NO OBITUARY: 2D LIVES ON

***"I think, in a worst-case scenario, sprites will live on in PDAs, Game Boy Colors and the back of aeroplane seats. Would I take on a 2D game? Yep. But it's got to be bloody good."***

***Joss Ellis, Virgin***

"It was kind of inevitable that 2D games would disappear," relates Peter Molyneux, "although I

bet you that, some time in the next few years, there'll be a brilliant 2D game come out that will prove us all wrong. It's like, you have renaissance films like Woody Allen's 'Manhattan'. Films like that prove that you can still make a movie in black and white, so, obviously, you can still make a game in 2D. I think it's inevitable that we all want to work in 3D. The sad thing is that it takes us further away from the things we should really be concentrating on in addition to that – the gameplay, the interface."

It's the simplicity of 2D games that, by and large, makes them appealing to long-term gamers. In the absence of 2D titles, could true 'twitch' gameplay live on? It's doubtful. In *GoldenEye*, the player is required to react with speed, and the onscreen stimulus is truly immersive. But there are many parameters for the player to consider. Indeed, many modern 3D games are so far removed from the no-brainer simplicity of, say, *Defender*, that it's difficult to believe that they both share a common heritage.

"I don't think we've got any 2D games in development right now," says Jez San, "but that's not surprising with Argonaut. We've always been into 3D games – even when the machines could barely achieve it properly. My first game ever that I developed was called *Skyline Attack* in 1984, and that was a 2D scrolling shooter in the *Defender* mould. But my second game was *Starglider*, and since then every game we've done is 3D." And herein lies an important point. Certain development teams are, and will remain, dedicated to 3D. There's a huge appetite in western territories for increasing numbers of polys in ever-more-involved games – or so prevalent wisdom suggests. Thus, the majority of European and US developers are firmly geared towards creating three-dimensional environments, regardless of the actual style of play beneath.






***Commandos: Behind Enemy Lines* (left) proved one of 1998's biggest PC hits. Its graphics may lack the polygon excesses of *GoldenEye* (right), but it would appear that consumers do not actually care**

**There's a huge appetite in western territories for increasing numbers of polys. Thus European and US developers are firmly geared towards creating three-dimensional environments, regardless of the actual style of play beneath**

## Worlds apart

Japan, however, is different. There, 2D games are still held in high regard. The likelihood of a large-scale resurgence of interest in 2D gaming originating from Japan, therefore, is possible, but unlikely. The videogame industry is a global market, and any high-profile project in Japan will take success in western territories into account. The N64, for example, is a beleaguered format in its home market. Many developers have shunned it in favour of PlayStation, Dreamcast and, paradoxically, Game Boy projects. The remaining faithful are developing first and foremost for the US and Europe. Are 2D games on the agenda? No prizes for the answer to that.

There's another problem. For all but the dedicated gamer and importer, the majority of Japanese 2D games are notably regionalised. From horse-racing sims to hardcore shoot 'em ups – often too difficult for the impatient, mainstream western gamer – 2D lives on in the orient, but in a form that the vast majority of UK gamers would find difficult to appreciate.

And in the west? Well, there will always be the occasional *Abe's Oddysee* or *Commandos: Behind Enemy Lines*. Cartoon cel art will continue to appear in graphic adventure games, and god games or management sims will still, in some form or other, champion the 'fixed' isometric view. The news that *Sim City 3000* discarded its original 3D design brief in favour of its traditional appearance was little surprise. Although the genre may embrace polygons, 3D remains impractical for certain design briefs. And it's this reason that ensures 2D's continued existence as a viable medium for videogames.

## 2D encore

The industry should be proud of its heritage, although it demonstrates a remarkable lack of maturity by continuing to regard 2D as an almost embarrassing stepping-stone to a polygonal future. Is it true that a film starring Jim Carey is superior to one featuring Cary Grant? Technology and trends indigenous to any particular era move on, but the fact that gamers have, for example, chosen to buy *Commandos: Behind Enemy Lines* as well as, or instead of *Unreal* is a revealing certitude.

"It's like the transition from the stage to cinema," says Joe Bonar. "The theatre is traditionally two-dimensional. When you're in your seat, all you can see is the stage, and you have this fixed view. In the cinema, they put the camera where they want it, for the best effect. Will there be a 2D game renaissance? Well, the stage never went away…"

## GAME BOY: 2D'S SPIRITUAL REFUGE

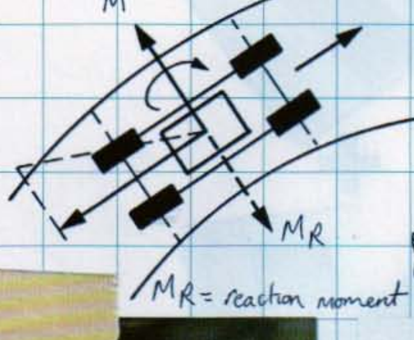
In handhelds and PDAs, the sprite lives on. Ironically, on the Game Boy, it's the attempts to recreate 3D gaming experiences that are judged as inferior product – and rightly so. The limited nature of its 8bit processor means that sprites aren't simply an option. They're a requisite.

"If you count Game Boy Color games," says Probe's **Joe Bonar**, "or the *Bust A Move* conversions that we've done, then we *are* producing 2D games. If you don't, then we're not. Simply because the 'message' has changed. 3D is just… well, it's what the new systems can do." The Game Boy, naturally, cannot.

"With the Game Boy, it goes down to the game," says Bonar. "You've seen and heard about *Re-Volt* [**E**63]. It's a real showpiece. Awesome looking. It's sweet. And we're thinking about putting it out for the Game Boy Color. What you've got to do is, you've got to take the fundamental essentials of the game, and think 'Well, this is how it's presented in 3D. So this is what we'll do to make it 2D.' Ultimately, the Game Boy Color market is going to be lucrative, because the development costs aren't massively high. And any publisher should to be able to sell a few units of anything, because there will be hundreds of thousands of GBCs out there. If you have a good product, it will sell.

"How do our programmers feel about doing 2D games? Well… everybody relishes the opportunity to make cash. [Laughs] But it does effectively mean making a new design from, say, one of the existing products we've already got. And people don't mind doing it if it's worthwhile to do so. But you do have to think seriously about how a product is presented. Obviously, if it's much, much less than the original… well, it's going to be reduced, but you don't want to sell yourself short. And people do have high expectations for Game Boy Color games, too.

"*Zelda*! When I got my Game Boy Color I was so impressed with the display that I wanted to play *Zelda* again. So I did, and it's still a top game. I want to play *Zelda: Ocarina of Time* on the N64, I'm really looking forward to it, but when I was playing *Zelda* on the Game Boy, I was thinking: '*How* are they going to recreate this in 3D?'"












## Motion

← The pressure is increased at the rear of the car and decreased at the front

## Equilibrium

At what speed can a car travel round a corner radius of 40m if the distance between its back wheels is 1.60m and the centre of gravity is 0.70m from the ground?

The car is just able to take the corner when the wheels are just about to leave the ground.
At this point S = W

$S \times 0.80m = F \times 0.70m$

$F = \frac{0.80S}{0.70} = \frac{0.80}{0.70} \times W = \frac{8.0}{7.0} \times mg$

since $W = mg$

where $m$ is the mass of the car and $g$ is the acceleration due to gravity.

so $F = \frac{8.0 \times 9.8 \times m}{7.0}$

If the car is travelling at speed v and the radius of curvature is 40m its centripetal acceleration is

$\frac{v^2}{r} = \frac{v^2}{40}$

This acceleration is caused by the friction force F so since force = mass x acceleration

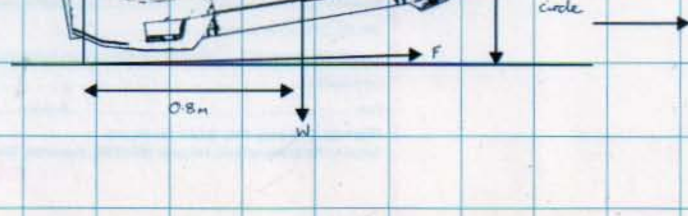
$F = m \times \frac{v^2}{40}$

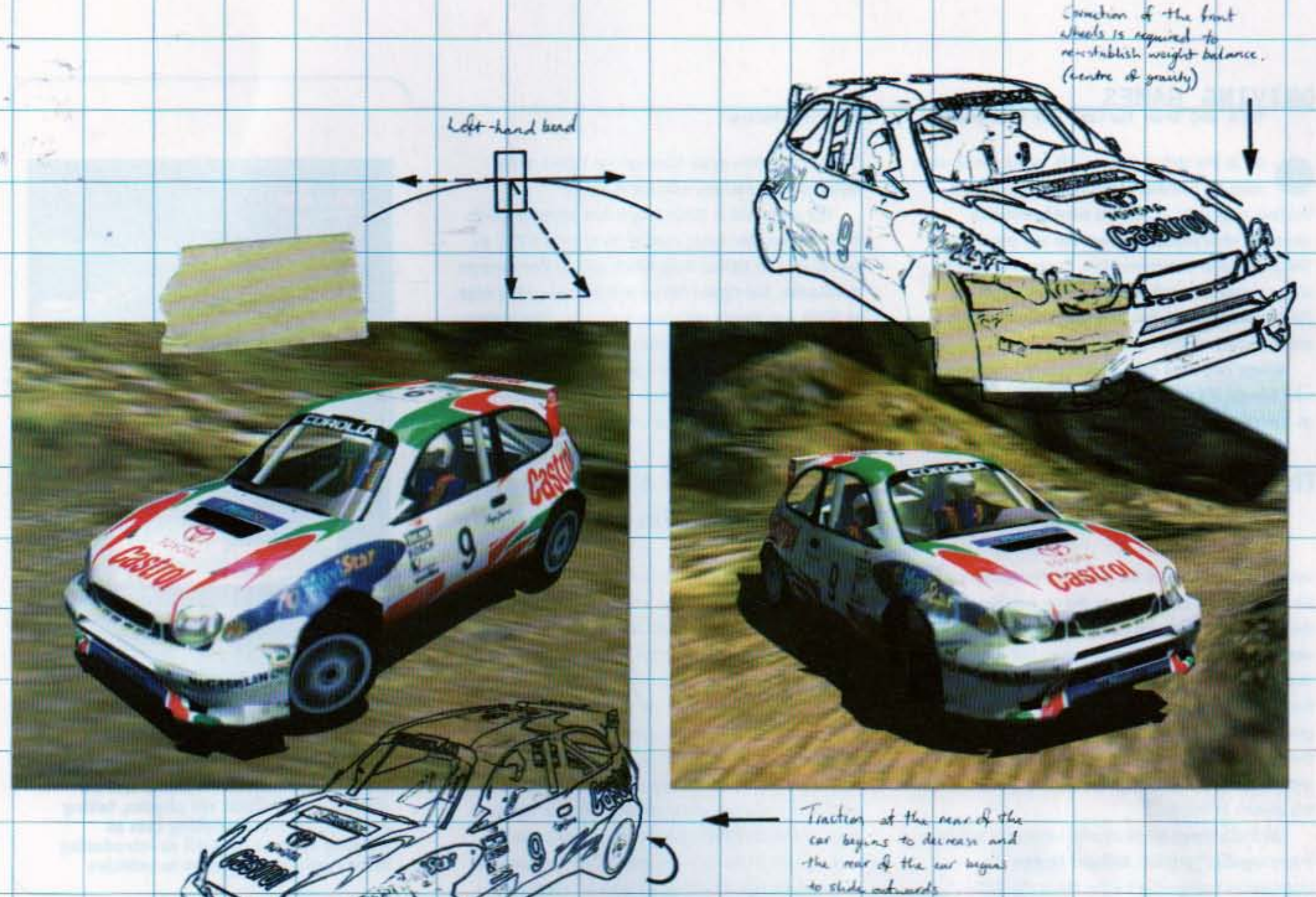
$11.2m = m \times \frac{v^2}{40}$

$11.2 \times 40 = v^2$

$v = \sqrt{11.2 \times 40} = 21\ ms^{-1}$

This also shows why it is that in rallying taking a corner too rapidly can lead to a somersault of the car.






# Physics matters

**Ingame physics is the driving force behind the new wave of science-led gaming. Edge explores this trend and considers the role more advanced physics will play in the future**

Thanks to gravity, falling objects accelerate towards the ground at a rate of ten metres per second per second. A cubic metre of water weighs exactly one metric tonne, and freezes at zero degrees centigrade. The fastest tornado winds blow at 318mph, which is almost half the speed of sound. And a pint of Stella Artois contains 29.5ml of pure alcohol. Some things in life, at least, never change.

In game worlds, however, you can't always rely on the laws of physics to apply. It can be frustrating when games break the rules. Take, for instance, the goalkeepers in football games. They have an uncanny ability to teleport their onscreen bodies into the path of the ball, or in other cases seem to exert a magnetic force over the ball so that it's sucked into their hands just when you thought a top-corner goal was certain. And how annoying is it when playing a fighting game, to be charged the same amount of damage when your opponent kicks your character in the shin as when he executes a shattering roundhouse to the head?

Fortunately, technologies are being developed that will one day do away with such anomalies. The increasing processor power that has helped make graphics and audio improve so much over the last year is also on hand to revolutionise the physical realism of game worlds. Accurate modelling of physics is becoming the order of the day for many developers. Games such as *GoldenEye* look and sound 'real', but soon they should begin to *feel* real, something *Gran Turismo* almost achieves, and although gameworld physics are still pretty rudimentary, **Edge** expects to see the next great leap forwards in game programming being made in this area soon.

By visiting each gaming genre, and speaking to the individuals responsible for the development of ingame physics, **Edge** seeks to discover how realistic physics are being implemented in games...

## DRIVING GAMES

**TOCA and Gran Turismo set a precedent for others to follow**

Prior to the shift to 'proper' 3D, racing games were relatively primitive in the way they portrayed the laws of physics. 2D worlds provided simpler shortcuts, while processor power was at a premium. The proliferation of high-end PCs, Dreamcast, and the ability of programmers to squeeze more out of the PlayStation and N64, has meant that physics engines are improving rapidly.

Where cars were once treated pretty much as blocks with wheels, it's now possible to model an automobile as a working system. It can be given a chassis and suspension system and the joints in this system can have subtle effects on the way the car handles. Though the car's actual motor isn't a simulated model of a working combustion engine, in games like *TOCA 2* it's treated as a separate force which feeds the wheels. Each tyre, in turn, interacts independently with the ground – be that grass or Tarmac, wet or dry – affecting the way the vehicle moves. Models for aerodynamics and collisions are each applied individually to complete the physics of the car.

"All these things are dealt with separately and then linked together," explains **Richard Ogden**, the programmer responsible for the physics in *TOCA 2*. "We can therefore easily advance one aspect of the model without messing with the rest of it."

The car model in *TOCA 2* is, in fact, appearing in its third iteration after being used in the original *TOCA*, as well as in *Colin McRae Rally*, which goes to demonstrate its versatility. But Ogden does admit that, as cutting edge as *TOCA 2* is, there's still a long way to go. "The physics in *TOCA 2* are accurate as far as it goes but they are actually very simple when compared to the kind of calculations that would be done by, say, engineers analysing the performance of a real racing car," he says.

### The car model in *TOCA 2* is in its third iteration after being used in the original *TOCA*, as well as in *Colin McRae Rally*

Unsurprisingly, Ogden believes that subsequent generations of graphics chips will enable better physics in games. Graphics processors are eventually expected to take charge of transformation (recalculation of 3D scenes) and lighting, leaving more CPU resources free to handle the physics. "We'll be able to do more detail in tyre physics, actually having the rubber deforming and wearing out, temperature changing, and the consequences of that," he says. "Also, aerodynamic simulation could potentially take into account the exact shape of the car. Other areas to look at would be the working parts of the car – the gearbox, etc. I reckon more advanced damage modelling will also be a feature."





***Gran Turismo* (top) combined excellent gameplay and competently represented physics. Codemasters' *TOCA 2* will be stepping up realistic car physics, taking a decent stab at modelling cars as working systems, as well as introducing more convincing damage to vehicles**

## FIGHTING GAMES

**As genre leaders, Tekken and Virtua Fighter redefine realism with every new iteration**





**A kick to the head in *Tekken 3* (top) calls up the right animation in response, but is it physically accurate? Many regard *Virtua Fighter 3* (above) to be more correct, but there is still much work to be done...**

The *Tekken* and *Virtua Fighter* series have both been responsible for increasing levels of realism in fighting games, principally for their introduction of true 3D fighting planes to the genre. *Tekken 3* on the PlayStation and *Virtua Fighter 3* in the arcade have also gone a long way towards a sense of physical realism which is absolutely necessary to the genre. Still, it's argued that there's a lack of weight and inertia in such games. In general, contemporary games of pugilism rely on motion capture animations for their realism, rather than models of the human body as a fighting system with bone, muscle and joints, subjected to attributes such as its own mass, suppleness and centre of gravity.

"The big problem with motion capture is that it's not about programming dynamics and physics," says **Mark Cale** of System 3, "it's more about replaying an animated sequence. You could think of it as pre-stored physics, not true real-world physics."

System 3, whose fighting credentials go back as far as *International Karate* on the Commodore 64, is currently working on a new fighting game targeted at the next generation of consoles. The as-yet-untitled project is focused on creating proper reactions to animated action, while basing this action on limb kinetics and their true life representation in a computer game. "This is almost impossible through the use of motion capture and can only be achieved by driving the dynamics of the game through a proper physics engine," adds Cale.

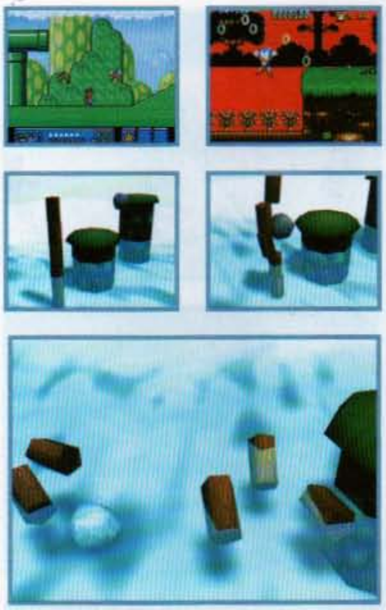
The System 3 team is aiming to make damage context sensitive. In most games the harm done depends on the move rather than where the opponent is hit. So players can feel frustrated when they lose bouts thanks to footsweeps rather than decent blows. Cale is suggesting that players should be able to choose the damage system they prefer – based on the move executed, or a new one based on the importance of the target.

### "Having good physics is important, and represents the future in every genre of realtime 3D games," Mark Cale

Whereas many developers are reticent when it comes to broaching the issue, often arguing that falsified physics make for better gameplay, System 3 is wholeheartedly embracing the concept. "Having good physics is important, and represents the future in every genre of realtime 3D games whether it is in driving, fighting or firstperson perspective," He concludes. "Simply put, it's how objects and people react in the real world and it should be the Holy Grail of all developers to try and simulate that realism."

## PLATFORM GAMES

**Platformers might be firmly rooted in fantasy, but there's always room for realism**



***Mario* (top left) and *Sonic* (top right) had their 'physics' preprogrammed on a situation-by-situation basis, whereas Argonaut's *Reeco* (above) uses a generalised physics engine which allows objects such as the rocks and logs to have real mass**

The concept of realistic physics is relatively alien to the platform genre. In fact, you can almost see fans of platformers forming pressure groups in favour of barring realistic physics from games. After all, how much fun would Sonic be if his body was modelled after that of a real hedgehog? Indeed, how fun would Mario be if his was modelled after that of an actual Italian plumber? More seriously, what would platformers be like if unlikely leaps of faith could not be made, if springs couldn't propel game characters five times as far as they would in the real world, or if small birds weren't able to carry characters 76 times their size across chasms filled with firebreathing salamanders?

As Argonaut's **Jez San** argues, this doesn't mean realistic physics engines can't be used to advance platform games. "In the past, platform games have had to have special case code written to handle each possible interaction that the player may want to have with each object in the game world," he explains. "It doesn't mean it can't be physically accurate if done this way, but it's more elegant and intuitive for both the gamer and the development team if there is a more advanced engine that can handle a higher level of physics and collision simulation."

The buoyancy of floating platforms is an instance San sites. In a simple game like *Frogger*, stepping onto a log would have no effect on its buoyancy. With a more advanced engine, the platform might bob unevenly where the character is standing and one end of it may bob out of the water. If the character is carrying something heavy this may result in the platform, or part of it, sinking below the waterline. Yet as San points out, the realism can go still further with a more complete model: "In a generic physics model, the density of the object versus its mass would affect its buoyancy. If you dropped it from a height, it would sink a little, and then bob up, possibly even springing out of the water."

**You can almost see fans of platformers forming pressure groups in favour of barring realistic physics from games**

It's possible that such an engine could be written which deals with all sorts of objects, and attributes factors to them such as density (affecting buoyancy), coefficients of friction (slipperiness) and coefficients of restitution (how bouncy they are). Once a physics model is in place that applies to the entire game world it can be tweaked in different ways to create the sort of cartoon physics hitherto seen in platform games, but which work together in a consistent and integrated system rather than being programmed on a piece-by-piece basis.

## FIRSTPERSON SHOOT 'EM UPS

**Benchmark titles such as Quake and GoldenEye partner great gameplay with realistic physics**

The firstperson perspective gives this gaming genre instant appeal thanks to its immediacy and and visual realism. Players are also given a certain amount of scope to interact with the game world. In games like *Quake II* you can run up spiralling staircases, leap chasms, climb ladders, duck into sewer pipes and leap from great heights into pools of water. *Unreal* and *Half-Life* even enable players to move crates around then climb on them to access new parts of the game, and to destroy a number of items in the game world.

**As real as these games feel, their programmers are having fun with real-world physics rather than replicating them**

Yet, as real as these games feel, their programmers are often having fun with real-world physics rather than replicating them. The heroic characters players control can, for instance, change direction in mid-air when jumping. Even the most capable gymnast knows that this defies Newton's laws. You can even combine a carefully timed jump with the force of a rocket-explosion to execute the rocket jump – a manoeuvre certain to blow your legs off in the real world. Witness the space base level in *Quake II*, meanwhile, to see the effects of meddling with gravity.

As **Scott Miller** of 3D Realms points out, much of this deliberate rule-bending favours gameplay considerations: "The bottom line is that realistic physics do not always mean better gameplay. *Trespasser* [reviewed this issue] is a perfect example of this."

However, this doesn't mean better physics can't be used to improve gameplay. *Quake II*, for instance, has seen numerous patches released in its wake tweaking things like the way players would find themselves stuck to the scenery, or sliding off things they bumped into in a curiously unnatural way. Furthermore, occasionally projectiles you're confident you've comfortably avoided still manage to hit you – which can prove horrendously infuriating.

*Max Payne*, a shoot 'em up currently being developed by Miller's team at 3D Realms, is to feature some breakthrough modelling of realistic weapons. "Bullets and projectiles actually travel at their proper speeds, rather than moving instantaneously as in previous games," says Miller. "Gameplay-wise this means that you'll need to lead opponents who are running at distance. Bullets will also ricochet correctly, and gravity will be a factor so that you will need to adjust your sniper scope for the proper range, otherwise you'll shoot too high or too low."



***Max Payne* (top) will include accurately modelled projectile weapons, while *Quake II*'s space level (above) demonstrates the amusing gameplay that can be had in low gravity situations**

## SPORTS GAMES

For the most part, playing football at Premier level is only possible when physics is involved

Due to their immediacy and competitive nature, sports games present environments where the implementation of realistic physics can prove crucial. It's while playing these games that players often feel the most cheated, when the game world doesn't behave as it would were you playing the particular sport in real life.

In football or ice hockey games, for instance, control of the ball is often determined by the rather large collision detection boxes around the players. Situations arise where game characters intercept the ball or puck when it actually appears to be quite far away from them, or, worse still, when they're not even facing the right direction to receive it. The collision detection in the game code seems to suck the ball into their control. Players can feel hard done by, even though the same collision-detection rules apply to their team. What some developers are looking at is specifying collision detection zones for certain parts of a player model's anatomy.

"At the moment, the physics aspect of sports games is in its infancy," says **Phil Drinkwater** from Silicon Dreams, developer of the *World League Soccer* games. "A football rolls and flies, but may not curve due to its spin. The net moves when the ball hits it, but it may only be an animation or built from a simple function. Cornerflags move, but not really due to the amount of wind in the stadium. All of these issues will be addressed within the next few years, providing a more entertaining game world."

For Drinkwater, it will still be some time yet before the movement of players themselves is governed by a physics engine rather than an animation system. "A true physics engine which controlled player movement would be based on the forces applied to muscles and gravity on the joints. This is too complicated at the moment," he believes.

### Though programmers will continue to cheat at sports physics for a while, great improvements are expected

In the meantime, programmers are more likely to turn to Inverse Kinematics, a simplified system of governing limb and joint interaction. Though programmers will continue to use motion-captured animation and cheat at sports physics for a while, great improvements are expected. "The leap over the next few years will be a noticeable one and should enhance gameplay dramatically, producing avenues gameplayers have been hoping for for many years," Drinkwater concludes.





***NHL '99* (top) makes good use of momentum across icy surfaces and big bodychecking, but makes plenty of puck cheats. *World League Soccer '99* uses motion-captured animations rather than a physics engine**

## ADVENTURE AND ROLE PLAYING GAMES

An advanced physics model could be more than just the icing on the cake

With RPGs coming from a turn-based background, and adventures tending to focus on guiding players through a story, neither type of game has been a particularly relevant forum for the development of physics modelling. Their cerebral and fantasy nature sees interaction with characters and collecting magical items usually taking precedence over realistic movement or combat. Plus, with a strong emphasis on fantasy, physics aren't such a critical issue. "You try modelling a stone-to-flesh spell in the real world," says **Ade Carless**, senior game producer at Gremlin. "Fossils don't grow on trees, you know!"

### If wrecking balls and battering rams could be better simulated, we might see a new RPG sub-genre arise: siege games

However, as with most other gaming genres the advent of 3D and the move towards realtime worlds has given game designers new avenues to explore. Gamers are tired of the swing-for-swing animated swordfights of titles like *Deathtrap Dungeon*. Now players crave more satisfying swordplay and weapons systems, such as those offered by the flawed *Die by the Sword*, or *Thief*.

Physics in RPGs and adventures can go much further than swords with realistic inertia. For Carless, currently working on the hotly tipped *Blade*, giving objects believable properties is one specific aim. "Previously, a thrown flask of oil might come to rest on hard flagstones without smashing, the crude physics model treating it the same as every other item," he says. "With a more sophisticated physics model, the flask of oil would break and spill its contents. A carelessly discarded torch would ignite the resultant slick."

Such implementations could enable players to kill or trap monsters. By letting fire loose into an RPG world, however, programmers would have to be careful what they put where – you wouldn't want players burning important gameplay items. Carless is looking for other improvements, too. If wrecking balls and battering rams, as well as walls themselves, could be better simulated, we might see a new RPG sub-genre arise: siege games.

*Blade* itself will bring puzzles where real-world physics are critical. A pendulum-based example will see players firing arrows into a suspended bucket to get it swinging, so they can eventually grab hold of it and use the rope it hangs from to swing across a chasm. There will also be water displacement puzzles. In combat, you'll be able to aim at various parts of a creature's anatomy, so you have a choice of killing or wounding it. The player can even chop off limbs and beat monsters with them. "By making the physics model resemble the real world more closely a player can assess his actions before carrying them out, and can expect a far more convincing, and fair, outcome," concludes Carless.





**The unwieldy swordplay in *Deathtrap Dungeon* (top) took away as much credibility from the game as the heroine's unlikely outfits. Gremlin's *Blade* (above) will base puzzles around its use of realistic physics**

## FLIGHT SIMULATORS

**Realistic physics has more than a small part to play here**





**NovaLogic, developer of *F-16 Multirole Fighter* (top), hopes to introduce the effects of bullet holes to plane dynamics. *Total Air War* (above) demonstrates the absence of crosswinds in this display**

Flight sims are serious games where realism is valued probably more than in any other genre. Those who program them are always quick to point out how accurate they've made their jetfighters, helicopters and missiles, and to the casual observer titles from NovaLogic, DID or EA's *Jane's* range do seem to model the physics of the real world very well indeed. Meanwhile, more than one reviewer has claimed, 'The game makes you feel like you're in the cockpit of a real F-16,' without having any knowledge at all of what it's actually like to fly such a plane. It's therefore pretty difficult to verify the accuracy of the physics in any flight sim, particularly those of the supersonic variety.

Flight sim programmers currently aim to model all the airborne effects you'd expect, such as lift, thrust, drag, gravity and angle of attack, and where jetfighters are involved Mach and G-forces come into the equation, too. Planes and missiles themselves can be moved around in 3D according to relatively simple vector calculations. The complexity grows quickly, however, with each factor added to the plane's flight dynamics or the game environment.

The inclusion of crosswinds, thermals and varying air pressure is currently uncommon or non existent. It's in this area that NovaLogic CEO **John Garcia** believes the next set of advances will arrive. "Consumers can expect flight simulation games to begin incorporating atmospheric and meteorological conditions such as rain and wind effects," he says. "With the swift advance of technology and the availability of increasingly powerful desktop computers in the marketplace, developers will also be able to model more sophisticated system malfunctions, such as holes shot through the wing."

**"Developers will be able to model more sophisticated system malfunctions, such as holes shot through the wing."** John Garcia

Despite the very strong claims in the area of physical and mathematical accuracy, flight sims are by and large bound by the same considerations affecting other games. "Developers must take into account the law of diminishing returns," says Garcia. "With limited CPU resources, there comes a point where fine tuning the flight model becomes unnoticeable to the consumer. With simplified physics in the flight model, more bandwidth can be devoted to other aspects of the game, such as management of the AI, complex environments, networking and graphics rendering."

Game developers do have a very compelling reason for bringing greater levels of realism into games, particularly in the area of physics modelling. If game worlds can be made to behave in the same way as the real world, players will be able to understand them better. They'll know what to expect in given situations, and thus can be led into more complex, less tenuous gameplay situations which they'll be able to deal with intuitively rather than by trying to second-guess the game designers.

On the other hand, games are an escapist form of entertainment. Take away the improbable from them and they wouldn't be half as much fun. If games began to resemble the real world too strongly, where would gamers be able to turn?

It seems clear that no matter which genre they're dealing with, game programmers will come up winners when they find the right balance between realism and fantasy. Fantasy dungeons that look and behave like real ones, powerful cars or jets that most of us will never get our hands on, blood-and-guts fist fights, and surreal outer space experiences involving geckos can all still benefit from an injection of realism. Whether it's a sort of realism that's tweaked, twisted or exaggerated, it doesn't really matter as long as the resultant games feel consistent and believable. To this end, physics engines look destined to take charge of games. The 3D revolution is old news. Physics is the new young pretender.

**Powerful cars or jets that most of us will never get our hands on, blood-and-guts fist fights, and surreal outer space experiences can all still benefit from an injection of realism**

As with 3D graphics, the hardware considerations are of most concern to developers. They remain very realistic about creating their physics engines, wary of overburdening processors in the arcade machines, consoles and PCs their games are designed for. No one wants to cripple gameplay. "To truly simulate real-world physics to a substantial degree would take as much computing power as the graphics themselves," points out 3D Realms' Scott Miller. "Maybe that's a new business waiting to explode: physics accelerator cards!"





# THE BEST OF 1998

**Some of the most exciting developments the gaming scene has ever witnessed have occurred this year. Edge picks the highlights**

This year has been a remarkable one for the videogames industry. It will go down in history as the 12 months in which the hobby truly became a massmarket entertainment medium, discussed in social circles in the same breath as music, cars and sport.

But, as well as proper acceptance in the mainstream, videogames have matured this year to the point where new landmarks have been set time after time, month after month, such is the ambition and talent prevalent within the creative community that drives the industry. Which naturally makes choosing the most accomplished endeavours of the last 12 months especially difficult.

But that was the task **Edge** set itself once more as the year drew to a close. Videogames may have reached a saturation point which sees a new title garner as much space in a tabloid newspaper as it does a specialist games publication, but this is the recognition that truly matters...

## 1998 ACCORDING TO PETER MOLYNEUX

**CO-FOUNDER, LIONHEAD STUDIOS**



**What was your favourite game of the year?**
It would have been *Grim Fandango* or *GoldenEye*, but then along came the Miyamoto factor and what I am sure will be my favourite game – *Legend of Zelda: Ocarina of Time*. Although I've only played it for six hours so far, what I have seen is nothing short of amazing.

**What was the best experience of 1998 for you?**
Well, 1998 has been the best year of my working life – the coming together of Lionhead over the last ten months has been amazingly cool. I suppose the single best moment was seeing the 3D creature in *Black & White* as created by Alex Evans and Scawen Roberts.

**And your biggest disappointment?**
That the advances in genetic engineering still haven't come up with a cure for receding hairlines, and Viagra is not all it's made out to be.

**What are your plans for next year?**
To release *Black & White* and to complete *Zelda 64*.

**What are you looking forward to in 1999?**
Working harder.

**Finally, which piece of hardware are you most looking forward to?**
Obviously the PlayStation 2 has to be the top of my list.

# GAME OF THE YEAR

**Seeking the title whose content delivers the most successful mix of everything that makes videogaming great**

## 1st

## LEGEND OF ZELDA: OCARINA OF TIME

| | |
|---|---|
| **Developer** | NCL |
| **Format** | Nintendo 64 |
| **Publisher** | Nintendo |

It may re-use some old *Zelda* gameplay elements a little too brazenly, its opening hour of gameplay may not be as inspiring as hype-followers had been led to expect, and its structure may not always be as easy to follow as previous 2D extravaganzas from Nintendo, but *Ocarina of Time* nevertheless stands out as a pinnacle of console gaming.








## 2nd

## GRAN TURISMO

| | |
|---|---|
| **Developer** | Polyphony Digital Inc. |
| **Format** | PlayStation |
| **Publisher** | SCEE |

It takes something rather special to convincingly and completely revolutionise one of the most populated genres in the history of videogames. With its astounding structure and playability, *GT* is it.





## 3rd

## METAL GEAR SOLID

| | |
|---|---|
| **Developer** | Konami (KCEJ) |
| **Format** | PlayStation |
| **Publisher** | Konami |

After so many developers' attempts to capture the spirit and atmosphere of action adventures on celluloid, this is the first true realisation of the potential for movie-inspired gaming. A work of art.





# GAMEPLAY INNOVATION

**Recognising the enhancements that thoroughly enrich the overall gaming experience**

## 1st

## LEGEND OF ZELDA: OCARINA OF TIME

| | |
|---|---|
| **Developer** | NCL |
| **Format** | Nintendo 64 |
| **Publisher** | Nintendo |

Using a thirdperson *Mario 64*-style viewpoint was an obvious choice for Nintendo with its 64bit *Zelda* update, but the masterstroke was the introduction of a firstperson mode and a lock-on facility during combat. The implementation of a wide range of weapons, all manageable in 3D, plus the existence of myriad sub-games cements the game's ingenuity.









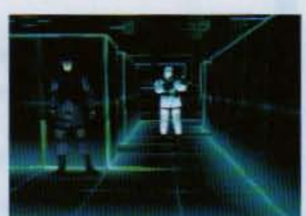

## 2nd

## METAL GEAR SOLID

| | |
|---|---|
| **Developer** | Konami (KCEJ) |
| **Format** | PlayStation |
| **Publisher** | Konami |

Stealth-based action and many original touches – from its Dual Shock use to its 'knowing' memory card references – reveal the effort that went into making this one of the cleverest games ever.





## 3rd

## BATTLEZONE

| | |
|---|---|
| **Developer** | In-house |
| **Format** | PC |
| **Publisher** | Activision |

*Uprising* may have started the trend towards firstperson strategy games, but *Battlezone* refined the concept beyond recognition. The sense of 'being there', in command of your units, is still unrivalled.





## 1998 ACCORDING TO JEZ SAN

**MANAGING DIRECTOR, ARGONAUT SOFTWARE**



**What was your favourite game of the year?**
*Parappa the Rappa*.

**What was the best experience of 1998 for you?**
Scuba diving in Maui, where I swam with the turtles. But a close second was seeing *Croc* reach number one, stick there for months, then stay in the charts for most of the year, and go on to sell over a million full-price copies. Also, visiting Tokyo and seeing the Dreamcast games and meeting Naka-san and Irimajiri-san.

**And your biggest disappointment?**
**Edge** reviews being biased towards the firstperson shooter genre, and downgrading 'younger' character games. Oh, and the appearance of far, far too many firstperson shooters!

**What are your plans for next year?**
To show people what we already know: that we got over our management difficulties of a few years ago, and that we're now a happening developer like we used to be, with some cool games and technologies and a great team. And, of course, to try and repeat – and maybe even beat – the performance of our games in 1998.

**What are you looking forward to in 1999?**
Releasing several new games, and perhaps **Edge** liking one or two of them. Oh, and getting my Open-Water PADI licence.

**Finally, which piece of hardware are you most looking forward to?**
Why, all of them, of course! And my Suunto Spyder diving watch.

## 1998 ACCORDING TO KAZANORI YAMAUCHI

### HEAD OF POLYPHONY DIGITAL INC.



**What was your favourite game of the year?**
I haven't played them yet, but I am very much looking forward to *Ridge Racer 4* on the PlayStation and *Zelda* on the N64.

**What was the best experience of 1998 for you?**
That I went to the Monte Carlo Rally and actually drove one of its special stages in the car that I myself drive.

**And your biggest disappointment?**
That the peak time for the meteor swarm from the Leo, which was supposed to be the biggest 'astronomical show' of the year in Japan, slipped and I missed the chance to witness the meteor shower. Thousands of meteors were supposed to be seen shooting in one hour… Japan was originally announced to be the best point to see this, but due to the slip of this peak time, the best point on Earth to see this became the Canary Islands.

**What are your plans for next year?**
Two titles are scheduled to be released from Polyphony Digital Inc. Of course, both of them are being made with the most elaborate programming and very high quality graphics which are the characteristics of Polyphony's products that everyone is expecting. We plan to release both in Europe, so please look forward to them.

**What are you looking forward to in 1999?**
1999 will be the year in which I probably must work the hardest. But because of that, I'm sure that I'll encounter a lot of occasions of discovery and invention during the process of game development. Above all, that would be the most exciting event for me.

**Finally, which piece of hardware are you most looking forward to?**
I'm looking forward to the next generation PlayStation.

# GRAPHICAL ACHIEVEMENT

**Tracking the most distinguished examples of realtime videogame art**

## 1st

### VIRTUA FIGHTER 3TB

| | |
|---|---|
| **Developer** | Genki/AM2 |
| **Format** | Dreamcast |
| **Publisher** | Sega |

So it isn't arcade perfect, but it remains the most potent demonstration of how dramatically the gap between arcade and home technology is closing. Exquisitely detailed textures, solid-looking models, intricate realtime 3D environments – all manipulated at a rate of 60fps. This is the game to usher in the new wave of visual delights.







## 2nd

### LEGEND OF ZELDA: OCARINA OF TIME

| | |
|---|---|
| **Developer** | NCL |
| **Format** | Nintendo 64 |
| **Publisher** | Nintendo |

Using an enhanced version of the engine that powered *Mario 64*, this allowed Nintendo's artists to truly let go, whether creating huge, fantastical 3D realms or distinctive character models. Sublime.





## 3rd

### HALF-LIFE

| | |
|---|---|
| **Developer** | Valve |
| **Format** | PC |
| **Publisher** | Sierra |

Who could have guessed that a tweaked *Quake II* engine was capable of rendering a game world as credible as *Half-Life's*? Lighting and textures are magnificent, but attention to detail marks this out.





# TECHNICAL ACHIEVEMENT

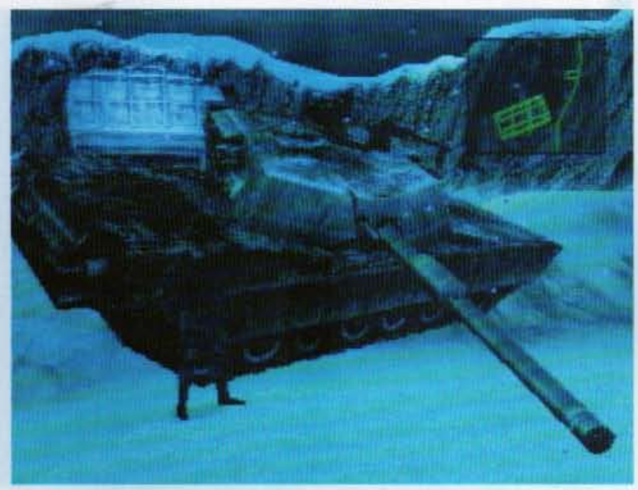
Dragging the most out of current hardware limitations via inspirational programming trickery

## 1st

### METAL GEAR SOLID

| | |
|---|---|
| **Developer** | Konami (KCEJ) |
| **Format** | PlayStation |
| **Publisher** | Konami |

Everything in Konami's stealth fest feels solid (no pun intended). The move from third- to firstperson in realtime is seamless and instantaneous, the texture range is massive and adventurous, and the visual quality is sterling – everything combines to create a totally convincing environment which must be pushing the PlayStation to the limits of its processing capabilities.







## 2nd

### TEKKEN 3

| | |
|---|---|
| **Developer** | Namco |
| **Format** | PlayStation |
| **Publisher** | SCEE |

Had *VF3tb* been arcade perfect, it would have been a landmark achievement, although in some respects not as impressive as what Namco squeezed out of an ageing 32bit machine with this.





## 3rd

### F-ZERO X

| | |
|---|---|
| **Developer** | NCL |
| **Format** | Nintendo 64 |
| **Publisher** | Nintendo |

This super-fast futuristic racer may not have the highest polygon count, but it is supremely fluid, displays 30 vehicles simultaneously at 60fps, and offers a workable splitscreen fourplayer mode.





## 1998 ACCORDING TO DARRIN STUBBINGTON

### HEAD OF ACCLAIM STUDIOS



**What was your favourite game of the year?**
*Banjo-Kazooie* was my personal fave. The execution of the genre was excellent, the game was paced right, and the tasks were achievable! I've always wanted to remake the classic platformer, but with this one out there it'll be more difficult now.

**What was the best experience of 1998 for you?**
Being promoted to the head of Acclaim Studios role. This really gives me a position to influence our total output, quality, and the platforms we support. I have four excellent studios to work with, and the prospect of growth is very exciting indeed.

**And your biggest disappointment?**
Personally I was disappointed that we couldn't squeeze *Turok 2* into the pre-Thanksgiving period. Although the game turned out to be fantastic, and deserved the extra time, we always tried to hit an early-October completion. Everybody involved worked very hard to realise this goal, but in the end quality won out. Of course, this leaves lots of room for improvement next time...

**What are your plans for next year?**
Growth, better games, expansion into new genres, solidification of the technology base, to name a few. During the next 12 months you'll see us produce more quality products than ever before, and more products on time, on budget. My main goal is to create a bigger, better studio group that is more focused on the task of making great games.

**What are you looking forward to in 1999?**
Game-wise, anything from Rare is a good bet for a fun game. As for the games from our own studios, *South Park* qualifies as a 1999 game, and it is very, very different in terms of content than any other N64 title. Also, our next generation baseball game should push the envelope, technology-wise. On a more adult, sinister front, *Shadowman* is turning out to be excellent, as well.

**Finally, which piece of hardware are you most looking forward to?**
Personally it has to be Dreamcast for 1999, but looking beyond that PSX2 is also exciting. We will be looking at both, and are thrilled to be working in an environment that enables us to do this.

## 1998 ACCORDING TO **ALEX GARDEN**

**CHIEF EXECUTIVE OFFICER, RITUAL ENTERTAINMENT**



**What was your favourite game of the year?**
My favourite game of 1998 was *Half-Life*, by far. I don't traditionally like firstperson shooters, and I feel somewhat biased saying this because the guys at Valve are my friends, but *Half-Life* was one of the finest games I have ever played.

**What was the best experience of 1998 for you?**
My best experience of the year was coming up with the design concept for our new title (which starts in December). It was the same type of experience I had with *Homeworld*. I was beginning to wonder if I had another one in me when the new idea hit. It was a physical experience and I felt much better knowing we had a killer new idea in the pipeline.

**And your biggest disappointment?**
My biggest disappointment this year was missing our Christmas ship. It was definitely the right thing to do for the game, but I feel guilty having promised we'd have it out for Christmas then disappointing people.

**What are your plans for next year?**
Relic has our new title with our second team starting in December. The whole 'no-hype' thing extends to that title as well, so unfortunately it's under tight wraps right now, but hopefully we'll have something cool to show off in four or five months. We also have the new title for the *Homeworld* team cooking on the back burner, so next year, Relic will be working on two new PC titles. I'd also like to try out this 'vacation' thing I've read about. Apparently, you just 'go away' somewhere and 'do nothing' for a while. This seems very alien to me, but interesting!

**What are you looking forward to in 1999?**
I'm looking forward to shipping *Homeworld*, first and foremost. I'm definitely looking forward to seeing the new 'Star Wars Episode 1'. Oh, and *Black & White* is right up there with the new 'Star Wars'! Can't wait to see that.

**Finally, which piece of hardware are you most looking forward to?**
Voodoo 4. Actually, I'm excited to see how fast Pentiums will be running near the end of the next year. It's like living in a sci-fi movie right now! I have a PII-450! I can still vividly remember my 286-10!

# AUDIO ACHIEVEMENT

**The most accomplished exponents of an often-overlooked fraction of the videogaming equation**

## 1st
## METAL GEAR SOLID

| | |
|---|---|
| **Developer** | Konami (KCEJ) |
| **Format** | PlayStation |
| **Publisher** | Konami |

High-end visuals, dramatic camera angles and wonderfully addictive gameplay would have amounted to little had *Metal Gear Solid* suffered a poor sonic score. Thankfully, every one of its many tunes is not only musically accomplished but outstandingly atmospheric, too, and the inspired sound effects further enhance the authentic-environment feel.








## 2nd
## HALF-LIFE

| | |
|---|---|
| **Developer** | Valve |
| **Format** | PC |
| **Publisher** | Cendant |

Subtle atmospherics, chunky blasts, yells, shouts and an occasionally cinematic score. Not to mention the speaking NPCs who communicate the absorbing plot to you as the game progresses. Classic stuff.





## 3rd
## GRAN TURISMO

| | |
|---|---|
| **Developer** | Polyphony Digital Inc. |
| **Format** | PlayStation |
| **Publisher** | SCEE |

Forget the music and concentrate instead on the sound effects. Whizzing turbos, grinding disc brakes, screeching rubber and raucous exhausts. Racing soundtracks don't get better than this.





# HARDWARE INNOVATION

**Because no matter how good, software is always limited by – and of no use without – hardware**

## 1st
## DREAMCAST

| | |
|---|---|
| **Manufacturer** | Sega |
| **Origin** | Japan/UK (graphics chipset) |
| **Price** | ¥29,800 (£150) |

After the bloated, underdesigned failure that was Saturn, few could have foreseen that Sega's new console would be as svelte, complete and downright sexy as it is. PlayStation's successor may well have more horsepower, but right now there's only one machine to own: Dreamcast. All Sega now needs is to ensure that the trickle of good games turns into a flood.



## 2nd
## N64 RAM PAK

| | |
|---|---|
| **Manufacturer** | Nintendo |
| **Origin** | Japan |
| **Price** | £30 |

Proof that Nintendo cannot be discounted easily from the race, an extra 4Mb of RAM should give N64 titles a new lease of graphical life, propelling them further ahead of the current 32bit competition.



## 3rd
## SOUNDBLASTER LIVE!

| | |
|---|---|
| **Manufacturer** | Creative Labs |
| **Origin** | US |
| **Price** | £200 |

Audio has long languished in the shadow of graphics engines. Soundblaster Live! is a loud reminder that players have ears as well as eyes. Listen out for surround-sound effects and some very big bangs.



## 1998 ACCORDING TO PAUL DOUGLAS

### CO-FOUNDER, CONFOUNDING FACTOR



**What was your favourite game of the year?**
On N64 I played *Banjo-Kazooie* all the way through, which is pretty rare for me nowadays. *Carmageddon 2* has a great physics engine and yet is still remarkably playable, although the missions seem too tough for me. *Grim Fandango* was great, displaying the usual LucasArts attention to detail. *Grand Theft Auto* and *Resident Evil 2* have been the only games in my PlayStation, which seems to only have sequels, Platinum re-releases and the occasional quality Japanese game nowadays.

**What was the best experience of 1998 for you?**
Oooh, I wouldn't like to say.

**And your biggest disappointment?**
The Interplay losses were a bit gutting, but I'm sure they'll turn things around next year. After all, four of their forthcoming games appear in **Edge**'s 1999 calendar.

**What are your plans for next year?**
To finish *Galleon* and see in the new millennium with some style.

**What are you looking forward to in 1999?**
Game-wise, no doubt I'll still be playing *Zelda*, and I'm really looking forward to *Black & White*, *Giants* and even *Metal Gear Solid*! And anything by Rare, of course.

**Finally, which piece of hardware are you most looking forward to?**
Well, as far as us Europeans are concerned it's likely we'll only see Dreamcast next year, but that's enough for me. I'm sure PlayStation 2 dev kits will appear sometime in the year but it's hard to get excited purely about hardware – it's the software that does it for me.

## 1998 ACCORDING TO DAVE PERRY

### PRESIDENT, SHINY ENTERTAINMENT



**What was your favourite game of the year?**
*Independence War* [aka *I-War*] from Infogrames.

**What was the best experience of the year for you?**
The *Wild 9* party at the Playboy mansion.

**And your biggest disappointment?**
That the party ended.

**What are your plans for next year?**
To release *Stunt Copter*, *Messiah* and *Sacrifice* all in one year. That ought to keep our fans happy.

**What are you looking forward to in 1999?**
My next Playboy party when we ship *Messiah*.

**Finally, which piece of hardware are you most looking forward to?**
I've already asked Santa for my fully loaded Dreamcast. It seems that he had signed an NDA on the PlayStation 2...

# COIN-OP OF THE YEAR

**The arcade machines to have claimed the most £1 coins from Edge's pocket in the last 12 months**

## 1st

## TIME CRISIS II

| | |
|---|---|
| **Developer** | Namco |
| **Format** | Arcade |
| **Publisher** | Namco |

A straightforward rehash of the original featuring better visuals would have been the easiest option (and, sadly, one taken by too many developers), yet Namco chose to put some thought into this sequel. A good thing, really, as the separate-screen twoplayer option offers one of the most convincing forms of cooperative play ever seen in the arcade.







## 2nd

## SEGA RALLY 2

| | |
|---|---|
| **Developer** | AM Annex (now AM12) |
| **Format** | Arcade |
| **Publisher** | Sega |

Although not as initially playable as its super-popular predecessor, underneath the visuals lies a considered and highly technical rough-road racer capable of mesmerising petrolheads for hours.





## 3rd

## GET BASS

| | |
|---|---|
| **Developer** | AM1 |
| **Format** | Arcade |
| **Publisher** | Sega |

If there's one thing coin-ops have the freedom to do, it's experimentation with control interfaces, and few companies have embraced this better than Sega with this weirdly addictive fishing sim.





# DEVELOPER OF THE YEAR

**The videogame-creating outfit responsible for the strongest and most consistent releases**

## NINTENDO

| | |
|---|---|
| **Key games** | *Zelda, 1080°, F-Zero X* |
| **Format** | Nintendo 64 |
| **Headquarters** | Japan |

In addition to claiming responsibility for one of the most significant titles in videogaming history, this year has seen other superlative NCL releases such as *1080° Snowboarding* and *F-Zero X*. Sure, there are developers capable of putting out more product in 12 months but, to **Edge**'s knowledge, quantity has never been directly proportional to quality.






# PUBLISHER OF THE YEAR

**A company showing respect for innovation and quality in an industry plagued by marketeers**

## CODEMASTERS

| | |
|---|---|
| **Key games** | *TOCA 2, Colin McRae Rally* |
| **Formats** | PC/PlayStation |
| **Headquarters** | UK |

Over the last decade, Codemasters has made the transition from developing unambitious 8bit titles to supplying a steady stream of sparkling hits. The hugely successful *TOCA* series was reinforced by *Colin McRae Rally*, while the recent decision to publish *Music* shows a willingness to experiment. 1999 should see new N64 and Dreamcast titles.







## 1998 ACCORDING TO MARTYN CHUDLEY

### MANAGING DIRECTOR, BIZARRE CREATIONS



**What was your favourite game of the year?**
*Banjo-Kazooie* from Rare. The game is god. Rare are gods. Best graphics, best structure, best playability. Sixty hours of solid gameplay. 'Nuff said.

**What was the best experience of the year for you?**
Being in Tokyo for the Dreamcast New Challenge Conference, courtesy of Sega, and the company proving their commitment and enthusiasm for their (and our) next generation.

**And your biggest disappointment?**
Turning 30. However, I still feel like a 20-year-old – but Sarah won't let me…

**What are your plans for next year?**
Finishing *Metropolis* for Sega and also finally branching out from the racing game genre [Bizarre produced *F1* and *F1'97* for Psygnosis] with something a bit different.

**What are you looking forward to in 1999?**
Dreamcast. The Rare trio of *Conker's*, *Perfect* and *Jet Force*. And sleep.

**Finally, which piece of hardware are you most looking forward to?**
Sorry, this is sounding like a Party Political Broadcast on behalf of the Sega Party, but obviously Dreamcast. PlayStation 2 will most probably be cool, too. Also Plasma TVs when they become affordable (to anyone other than Jez [San] – sorry, Jez!).

# THE REST OF 1998

With the obvious categories decided, **Edge** presents a selection of peripheral accolades

## MOST DISAPPOINTING GAME

*Mission: Impossible*



## TACKIEST VIDEOGAME 'BABE'

*Deathtrap Dungeon*'s Red Lotus



## MOST VOCAL SPOKESPERSON FOR THE DEVELOPMENT COMMUNITY

Peter Molyneux



## BEST INDUSTRY PARTY

Sony's PlayStation ECTS bash



## MOST HONEST ADVERTISING

Sega's Japanese Dreamcast campaign










## PROMOTIONAL COSTUME MOST LIKELY TO ERODE ITS WEARER'S SELF-ESTEEM

Tomba at E3



## MOST REVELATIONARY SOURCE OF INSIDER INDUSTRY GOSSIP

The original Filthy Truth Website (now shut down, unsurprisingly)

## MOST UNINTENTIONALLY RETRO-STYLED GAMING ACCESSORY

**VM Labs' Nuon controller**



## BEST PROMOTIONAL CGI

***Tekken 3***



## DODGIEST PROMO PHOTO APPAREL

**GoD's Mike Wilson**



## BIZARREST PERIPHERAL

***Techno-Motor*'s oversized Saturn joypad**



## BIGGEST BOMB OF THE YEAR

***Wild 9***



## BIGGEST WASTE OF ENERGY

**Chasing a PlayStation 2 announcement**

## SADDEST USE OF RESOURCES

**Internet sites run by clueless industry wannabes**

# TESTSCREEN

The definitive monthly assessment of the world's latest videogames

## First impressions count

You'd think that by now anyone about to launch a new console would realise the importance of the initial software line-up. Videogaming history is filled with potentially exciting hardware launches marred by a disappointing lack of high-quality software. Tragically (despite subsequent decent software support), some of them never recovered from a lacklustre inauguration.

When they first appeared, both the 3DO and the Jaguar, with *Crash 'n' Burn* and *Cybermorph* respectively, only offered one title each worth purchasing. Previously, the first PC Engine buyers must have wondered about *Drunken Master* and *Tale of the Monster Path* before handing over the cash. And somewhere in between those formats, the version of *Altered Beast* bundled with the PAL Mega Drive must have frightened away as many as those who bought Sega's 16bit machine on the promise of better things to come.

Even Sony's PlayStation only offered *Ridge Racer* to seriously tempt Japanese gamers into committing their Yen to its global consumer electronic empire. By the time of the UK launch, Namco's impressive racer lined up alongside Psygnosis' *Wipeout* and SCEE's *Jumping Flash*, yet although the best of a lukewarm bunch, these weren't absolutely essential purchases.

This is the concept most companies fail to grasp – but one Nintendo seemingly understands all too well, to the point where gamers have come to expect a frustrating string of hardware delays simply because of unfinished software. When it launches a machine, NCL makes sure there are at least a couple of titles worth playing on it. But not just any two titles. The SNES boasted *Super Mario World* and *F-Zero*, while the N64 proudly showed off *Super Mario 64* and *PilotWings 64*. All were interactive entertainment that immediately caught the gaming public's imagination and met their expectations on every level.

Sega, on the other hand, has typically taken a different approach. Disappointingly, like the Saturn with *Virtua Fighter* before it, Dreamcast currently only possesses one strong, impressive title (ironically *Virtua Fighter 3tb*, see p84). Admittedly, *Sega Rally 2* was wisely delayed at the last minute – given its Tokyo Game Show appearance, **Edge** suspects its presence would have done more harm than good.

The first batch of titles is critical to a console's success. It's what the industry, the press, and more importantly, the consumers base their opinion of the machine on. The hardware may be able to shift a zillion polygons per second, but it's of little use if *Derivative Cutesy Platformer 3* is all you have to play on it.





**Other than the superlative *Virtua Fighter 3tb* (left), *PenPen Trilcelon* (centre), *Godzilla Generations* (right) and *July* (not pictured) formed another launch line-up that, disappointingly, was average at best**

**Edge** evaluates games on a scale of ten, where five naturally represents the middle value. A game receiving a 'seven out of ten', for example, is a competent title with noticeable flaws but which should still appeal to a considerable range of players – naturally more so to those who favour the title's particular genre. It does, after all, score two points above average and should therefore not be considered as such.

**Edge**'s rating system is fair, progressive and balanced. An average game deserves an average mark – not, as many believe, seven out of ten.

## Videogames on the Edge

**This month's stress relievers...**



**Zelda: Ocarina of Time (N64) Nintendo**
Still being picked apart by **Edge**'s tireless band of hardened gamers, *Zelda* has depths that intrigue and confound by turn. Here's to the 64DD sequel.



**Sonic Adventure (Dreamcast) Sega**
Released by the time you read this, **Edge** had the opportunity to try out a nearly finished version of what could be a big hit in Japan at Christmas.



**Half-Life (PC) Cendant**
Tightly plotted, visually and aurally stunning, and fantastic fun to play, *Half-Life* scuppers magazine production quicker than the offer of a free lunch.



**Super Mario 64 (N64) Nintendo**
*Zelda*'s arrival urged **Edge** to check out the previous N64 title to cause such a stir in the office, and the paunchy plumber was found in remarkable shape.

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# VIRTUA FIGHTER 3TB



Sega devotees were desperately hoping for an arcade-perfect conversion, but it was not to be. This is a close translation, but it lacks the coin-op's fineries





This entire Great Wall of China scene (apart from the horizon detail) is rendered with realtime polys. It's a fair indication of Dreamcast's power





**Dreamcast's one-time development namesake, Dural, is also *VFtb*'s final character. In this incarnation her shiny metallic 'skin' is offset by the dull surroundings**

In the age of 8bit videogaming, there was one word that could snare a potential game purchaser's attention: arcade. 'Arcade-style gameplay' and 'arcade-quality graphics' were often promised (though rarely delivered), along with the killer claim of an 'arcade-perfect conversion'. Often these assurances were accompanied by coin-op screenshots, rather than those from the far more crude home version.

That so many innocent gamers gave credence to such outrageous statements is now hard to comprehend, (although EA's recent *Moto Racer 2* television adverts, which used PC visuals to sell the PlayStation version, indicate that the trend of dishonest marketing hasn't entirely passed). It's true that many titles have appeared to come close to delivering a coin-op experience in the home, including the likes of *Ridge Racer* and *Tekken*, but none have really replicated their original incarnation. Even now, 120bits on from the Spectrum and C64, a state of true equilibrium between arcade and home has yet to be reached. Sega's conversion of its respected beat 'em up *Virtua Fighter 3tb* is a well engineered translation from the Model 3 coin-op to its newborn console, Dreamcast. But while it's not a perfect replication, the similarities are many.

Running at an unbroken 60 frames per second in the console's standard 640x480 resolution, *VF3tb* is – if nothing else – testament to the power of its host platform. While gameplay continues to reign supreme over all else, the astounding clarity and finesse of *VF3tb*'s visuals is the facet of the game that strikes you first. The ex-generation fighting games for the PlayStation and Saturn may have offered reasonably detailed character models, but they inhabited stark arenas devoid of features. *Virtua Fighter 3tb* changes everything.

Bouts take place atop sloping downtown rooftops and on flights of steps, in the lapping waters of a desert island and on the Great Wall of China. Initially this appears to be a graphical gimmick, simply a new trick in the videogaming book. But *Virtua Fighter* has grown into a highly





Format: **Dreamcast**

Publisher: **Sega**

Developer: **Genki/AM2**

Price: **¥5,800 (£25)**

Release: **Out now (Japan)**





**Each of the fighters' moves are graceful and swiftly animated. The dynamics of the gargantuan sumo wrestler Taka-Arashi (above right) are handled with ease**



**All 13 of the arcade original's characters are featured (if Dural is to be counted), although the lack of a versus option verges on the ludicrous**

technical game since the inception of the series in 1993, resulting in the uneven floors of the third game affecting the movement and attacks of the characters. Among coin-op cognoscenti such details may seem like old news, but it's a relatively new polygonal achievement in the home console market.

In gameplay terms, the Dreamcast version of *VF3tb* confirms what only dedicated, cash-rich arcade frequenters must have known all along – that the AM2-developed fighting game had matured into the leading title of its genre. It may not have the instant, eye-popping explosive appeal of *Tekken 3*, but extended play reveals that there is a deeper, more satisfying complexity to the third *Virtua Fighter* title. Each of the protagonists is armed with a vast selection of attacks, utilising simple hits and complex manoeuvres to outwit and overpower opponents.

In some respects, the greater depth is due to a different approach being taken in the design of the game's control method. Where once *Tekken*'s approachable 'one button for each limb' system seemed the way forward for the genre, it limits interaction in a true three-dimensional space. *VF*'s alternative, with buttons for punch, kick, defend and dodge, while perhaps not offering the same scope for multiple attack movements, allows you to control the characters with unrivalled grace. The virtual fighters can be made to weave, dance and turn around one another – once the player has attained a reasonable level of aptitude. On the topic of control, it's worth noting that

The **Dreamcast version** of *VF3tb* confirms what only **dedicated arcade frequenters** must have known all along; that the AM2 fighting game had **matured into the leading title** of its genre





**Motion blurring – one of the game's few special visual effects to feature – is used extensively**







The novel (but entirely confusing) name-entry system involves beating the alphabet until the desired word is spelt








**Compared to the coin-op original, there are definite deficiencies in Dreamcast *VF3tb*, including a slight (but not impinging) drop in the overall speed of play**



**Dodging is an essential gameplay element, yet it can leave you open to throws...**

Dreamcast's arcade sticks are constructed to just about the same standard as those of Sega's arcade cabinets, and add significantly to the playing experience.

The '*tb*' addition to *VF3*'s title indicates that this is a conversion of the special edition Team Battle version of the coin-op, which has the option to preselect a rounded team of three fighters. While this makes for a fine extension to the basic game, there is a noticeable lack of the other play modes which made *Tekken 3* such a worthwhile purchase for the home. There is the option of a training mode and a menu system which allows you to play back the various characters' ending movies once unlocked through completing the game, yet the omission of a proper 'versus' selection is unforgivable, forcing twoplayer fights to be organised via the singleplayer mode. Purists may well argue that the arcade original lacked said option, but in **Edge**'s view, buyers of modern coin-op conversions have the right to expect more from their investments than unenhanced facsimiles.

***VF3* is the key title** among the first generation of software. Only in the long-term **will it be possible to judge** whether it is **utilising the Dreamcast console to best effect**




**Unlike *Tekken*, it's possible to force opponents out of the fight arena, with severe consequences**

Play the game and it cannot be denied that *VF3tb* is smooth, intricate and classy. But that's as a result of running on Dreamcast, for which it is the key title among the first generation of software. Only in the long term will it be possible to judge whether it is utilising the console to best effect. And the lack of serious contempory software, such as the delayed *Sega Rally 2*, makes appraising its true power yet more difficult.

Early impressions of forthcoming *Sonic Adventure* are very good, and more performance will certainly be wrung from Dreamcast in the future, as with all hardware. However, *Virtua Fighter 3tb* is an addictive and attractive piece of software, which gets close to replicating the output of a high-end coin-op board with seemingly little trouble. Every new console needs a killer app for its launch, and in the face of little opposition, this is Dreamcast's.

Edge rating:

Eight out of ten

# PENPEN TRIICELON







While the colourful and intricate visuals in *PenPen* are distinctive, they're not a fair representation of Dreamcast's true graphical capacity





The bloody water splashes in the haunted house are skillfully realised (right)

Format: **Dreamcast**

Publisher: **Sega**

Developer: **General Entertainment**

Price: **¥5,800 (£25)**

Release: **Out now (Japan)**









The winning sequence is as ludicrous as the course selection screen (top two). Sadly, the multiplayer events are unlikely to promote close racing (above)

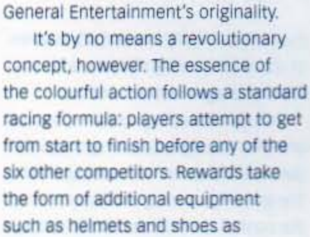
While *PenPen Triicelon* is quite clearly the work of unhinged minds, **Edge** prefers to applaud the title's innovative approach and General Entertainment's originality.

It's by no means a revolutionary concept, however. The essence of the colourful action follows a standard racing formula: players attempt to get from start to finish before any of the six other competitors. Rewards take the form of additional equipment such as helmets and shoes as necessary progressional aids. It's what happens between these two points that sets it apart from other racing titles. It doesn't, for example, feature a single vehicle and the track is rarely coated with tarmac. Instead, the PenPen must complete sections of the course by walking, swimming or sliding their way through themed stages which feature anything from giant sweets to shipwrecks and the treacherous interiors of a haunted house, all depicted in impressive graphical splendour.

Naturally, these PenPen are not creatures of a variety that **Edge** has ever witnessed... The lower body is 'penguin', but the top half can take the form of many creatures. You'll recognise a shark, dog or hippo, while a mixture of several can't be discounted. The resulting mutations aren't as grotesque as they sound, though. In fact, the PenPen are instantly likeable mutoids, oozing enough character to put many other game protagonists to shame.

Unfortunately, though, *PenPen Triicelon* doesn't play as well as it looks. It's a shame that only the sliding stages provide real racing thrills. Swimming sections convey a relaxing and fairly engaging atmosphere (mostly as a result of impressive scenery) but the pedestrian segments are tedious. They can also prove frustrating, as your character often gets knocked all over the screen without the possibility of regaining control until all of your nearest opponents have passed and things have calmed down somewhat.

Furthermore, the proceedings are unbalanced, failing to promote close racing (particularly noticeable in multiplayer mode), with most of the races degenerating into a solitary progression through the stage, offering an occasional glimpse of an adversary in the distance. It's fun, but its flaws far outweigh its charm.



Every PenPen wears a similar silly expression, perhaps bought on by a severe identity crisis...

Edge rating:

Five out of ten

# GODZILLA GENERATIONS

Format: **Dreamcast**

Publisher: **Sega**

Developer: **General Ent.**

Price: **¥5,800 (£25)**

Release: **Out now (Japan)**




***Godzilla Generations*** **is a great concept with much potential. Sadly, the end result feels underdeveloped**







**Whether hit by missiles, laser rays, a swinging tail or simply touched by a gigantic reptile, all of the buildings break up into a spectacular cascade of polygons**









**Lizard generations (clockwise from top right): Mecha Godzilla, bog standard Godzilla, Godzilla USA, Minilla, and First Godzilla**

Other than exploding trees, there's something odd about *Godzilla Generations*. It feels strangely unfinished, particularly when you compare its content to the visual splendour offered by *Virtua Fighter 3tb* and *PenPen Trilcelon*.

The concept is simple: as Godzilla, or Mecha Godzilla, your task is to trample all over Japan, destroying the major cities in your path. There is a variable time limit and points are awarded for the percentage of carnage, as well as any destructive combination of moves you used in the process. To this end, Godzilla's fire and laser breathing ability has been maintained in addition to a limited offensive and defensive repertoire, which differs between characters. While normal Godzilla tail-swipes everything around it, and uses its shield against helicopter and jetfighter pilots, Mecha has access to a host of projectile-based artillery, mostly fired through its fingers.

There are more characters, however. Buy a Godzilla VMS and, after a little nurturing, Godzilla USA (based on Hollywood's absurd 'Alien'-style interpretation), First Godzilla (from the very early Japanese monster films), and the young, diminutive Minilla become available on the option screen. All differ in attributes, of course.

A little more nurturing reveals up to 36 other monsters. While these cannot be used in the main game, they can be downloaded from the VMS, given a polygonal appearance and pitted against each other in turn-based combat. It's a concept very similar to the N64's *Pocket Stadium*, however, the baby biters eventually grow into Godzilla's famed adversaries of old, such as King Ghidora, a three-headed dragon-esque creature.

It's an interesting addition, but not one that manages to elevate *Godzilla Generations* above sub-average status. The graphical quality is disappointing, the control method decidedly clumsy and the camera system, although occasionally highly cinematic, is often confusing, making it hard to locate ground-based objects such as enemy tanks and small residential dwellings.

There is some fun to be had in walking through a towering skyscraper, leaving an enormous hole gaping behind you, and later levels offer a particularly high density of buildings to destroy, but *Godzilla* is hardly going to frighten current 32- and 64bit owners into selling their machines.






**The camera system tends to select angles that, while cinematic, are a hindrance (right)**

Edge rating:

Four out of ten

# THIEF: THE DARK PROJECT







The story begins as a simple fantasy-based tale of thievery – but creatures and environments get more outlandish





Three ways to take on the enemy: from the safety of a rooftop with the bow and arrow, using the blackjack on the back of the head to render opponents unconscious, or with swordplay

Format: **PC**

Publisher: **Eidos**

Developer: **Looking Glass Studios**

Price: **£40**

Release: **Out now**

To the casual eye, developer Looking Glass Studios appears to have backed a loser – in a world where gamers demand increasingly extravagant ways to blast the body parts from opponents in firstperson action games, *Thief* discourages conflict. A game where the enemies are to be avoided and where the only bloodshed is usually that of your character – can Looking Glass be serious?

Such a view underestimates the developer's experience with this kind of role playing game, however. This is the outfit that produced the acclaimed *Ultima Underworld* titles and *System Shock*. No other developer is capable of evoking such a sense of place and, by emphasising the importance of the lighting effects, stealth tactics, and by pushing character behaviour to the fore, manages to create a whole new spin on an overly familiar genre.

Shadows are the most important asset to the player, with a glowing onscreen gem indicating how well hidden stealthy hero Garrett is. The light in an area, closeness to walls, the speed at which he's moving, even whether or not he has a weapon drawn, all affect his visibility. Finding a safe area, then watching as a guard walks by just inches away, is truly nailbiting. Noise is almost as important, with the opening of doors, walking on metal gratings and other actions alerting enemies. Guards will shout into the dark if they hear something, or call for help if they do find Garrett.

The audio also aids the player immeasurably. Listening for footsteps, the sound of whistling, or conversations help gauge where the enemy is. Ignore such aids and it's easy to walk headlong into the enemy. Swords and other weapons can be used, but direct fighting is not this hero's strong point. Of more use is the bow, which enables long-distance attacks. Several arrow types are also geared towards stealth, with noisemaker arrows for providing distractions, moss arrows for covering the ground with silencing vegetation, and water arrows to extinguish lights – a great idea, and one which becomes invaluable in later levels.

The more critical will point to the slightly dated 3D engine, the limited number of enemy types, and the fact that a design that shuns battle can't possibly be as exhilarating as a proper shoot 'em up. And, yet *Thief* manages to create an unparalleled atmosphere and, for the most part, the avoidance of conflict provides just as many edge-of-the-seat moments as can be found in the likes of *Half-Life*. It may not have the same commercial appeal as that new benchmark title, but it's ultimately just as innovative and laudable in its own field.

Edge rating:

Eight out of ten





**Some environment detail is rudimentary, but with stealth elements that outdo those of *Metal Gear Solid*, *Thief* creates an amazing atmosphere**

# TRESPASSER

Format: **PC**

Publisher: **Electronic Arts**

Developer: **Dreamworks Interactive**

Price: **£35**

Release: **Out now**





**Finally, a situation where Anne's long, thin arm may prove useful (top)... Handling one of the many weapons left lying around is at least manageable – just**



**A tyrannosaurus with a bad case of constipation – better move the jeep**









**Velociraptors prove the most dangerous of the selection of prehistoric creatures inhabiting the island. Meeting them unarmed is not prudent**

*Trespasser* is an example of too much realism. It's also an indication that its developer hasn't the slightest fundamental understanding of what constitutes gameplay.

The action occurs several years after the setting for 'The Lost World'. Dinosaurs roam freely, preying on each other within the aquatic boundaries of their Pacific island, known as Site B. Anne crash lands on the beach and must traverse the island, reactivate communications and make her way back into civilisation. Along the way, a variety of puzzles must be solved and several creatures are bound to show their prehistoric heads. Some are harmless, while others will eat you...

The proceedings start going drastically wrong before Anne gets to meet any of the genetically reconstructed wildlife. In its quest to implement what is a truly remarkable physics engine, capable of emulating real-world dynamics convincingly, Dreamworks has overlooked critical gameplay aspects. For instance, any imperfection in the terrain no higher than a step requires the jump key, with Anne seemingly unable to lift her leg above ankle level.

Commendably, any of the many objects reacts authentically to its environment and (depending on its weight), can be picked up and used in conjunction with any other item to overcome potential obstacles. However, manipulating Anne's ridiculously long arm can prove very awkward (further enhanced by her ability to drop anything at the slightest brush with its surroundings) and to see a particular structure – such as a walkway over a menacing pothole – collapse after agonising minutes were spent constructing it is most demoralising.

Indeed, attempting to overcome the slightest obstruction becomes laborious and time-consuming. Crucially, the mouse/keyboard control system is not an adequate solution to incorporate all the movement parameters offered.

But there are visual dilemmas, too. Even on a Voodoo 2-equipped P400, progression is sluggish, with scenery constantly re-building itself without a hint of subtlety as you approach any of its environmental structures. And the dinosaurs may behave according to hunger, thirst, fear and curiosity, but they move as if suffering from chronic constipation, shattering the illusion of the real world that the developer is so keen to convey – albeit populated by creatures long extinct.

*Trespasser* is an impressive technical demo with an obsessively intricate physics engine. It just isn't a game.

Edge rating:

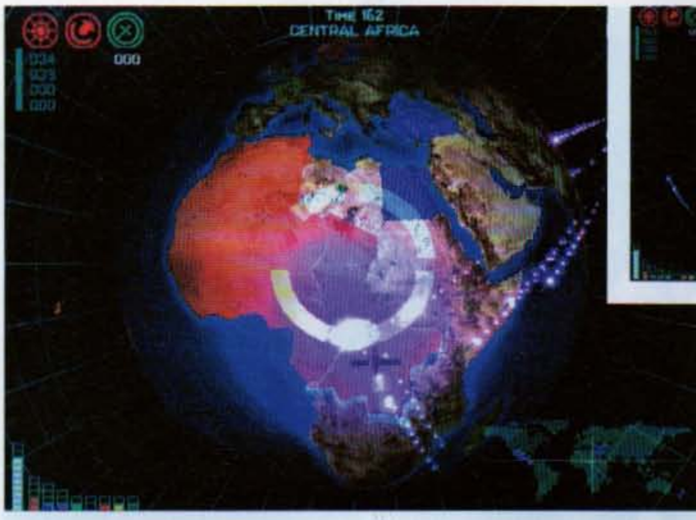
Two out of ten

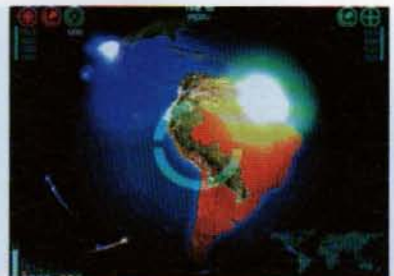


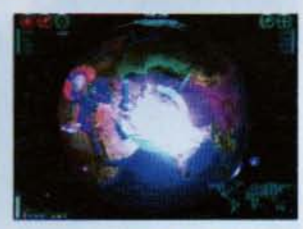


**Even on a high-end PC, the scenery is constantly updating and rebuilding itself**

# GLOBAL DOMINATION



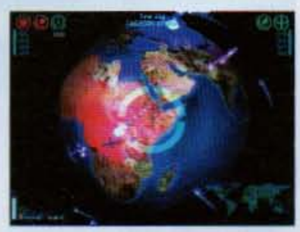





| | |
|---|---|
| Format: **PC** | |
| Publisher: **Psygnosis** | |
| Developer: **In-house** | |
| Price: **£30** | |
| Release: **Out now** | |

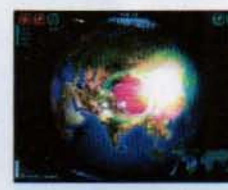
**There is an element of resource management (albeit simple) which comes into play during later levels**



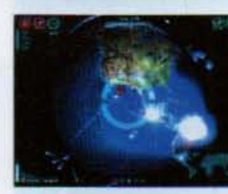


**The game's concept is remarkably simple yet proves highly addictive**







**The campaign editor (top) allows games to be tweaked but, for sheer frantic fun, few things beat allocating all of the nations between the players**

Risk, *Missile Command* and the holographic 'game' in 'Never Say Never Again' are the three games Psygnosis quotes as the inspiration for this, its latest PC creation. And while the FMV interrupting the 20 preset singleplayer missions is a stern reminder that one can rapidly have too much of bad thing, as with most things in life, *Global Domination*'s remarkable simplicity is the key to its addictive qualities.

This clarity has been implemented in the control system, with the majority of functions achieved via the mouse and two keys – the former rotates the globe, while the latter alternate the offensive and defensive weapons as required. Furthermore, pressing the left mouse button launches the assault artillery (missiles, submarines, bombers, jet fighters, satellites) and, predictably, the protection devices are deployed via a quick tap on the mouse's right button.

The aim of the game is to overpower and conquer any country at war with your own (the amount of territories you have/require depends on the type of game selected), by using a combination of the resources available. For instance, neutralising a hostile nation with a nuclear warhead may be satisfying and initially seem an attractive option, yet, as the damage they cause is permanent, once beaten the newly acquired terrain is unlikely to prove very useful when attacking other territories.

A much smarter approach would be to neutralise its factory (and therefore its weapon-manufacturing capabilities) and, subsequently, its attack and defence silos before inflicting enough damage to claim it as your own, safe in the knowledge, of course, that any damage caused by the invader (provided it's not atomic in origin), is instantly revoked.

Naturally, different nations possess different technologies and, while not the most advanced example of its type, the AI is capable of giving the illusion that you're up against another human brain. Nothing beats the real thing, however, which is why a multiplayer option is included; allowing for up to 16 participants.

As you progress further into the game, new and more powerful weapons become available and, before long, things can get a little hectic, with countries constantly forming and breaking alliances with frightening rapidity. Thankfully, the colour coding helps immensely when attempting to work out who's attacking who, and where the next warhead should be heading.

While it won't appeal to everyone, and is unlikely to tear you away from the real world and turn you into a dribbling misanthropist, *Global Domination* remains an addictive, refreshingly different title that deserves to occupy your PC's CD drive on a regular basis.

**Edge rating:**

**Seven out of ten**

# HERETIC II

Format: **PC**

Publisher: **Activision**

Developer: **Raven**

Price: **£40**

Release: **Out now**







**Corvus' homeworld is blighted by a strange disease. It's not long before its origins become all too visible**





**Spell effects always provoke highly impressive light shows that make the screen positively glow**







**Complementing the range of weapons and objects, a number of defence spells can be cast (top). The number of enemies attacking at once is particularly impressive (above)**

Raven's approach to its *Hexen*/*Heretic* series is becoming confusing. *Heretic* was the original sequel to *Hexen*, a fantasy-based *Doom* variant that has more recently spawned *Hexen II*, a fantasy-based *Quake II* variant. Now the *Heretic* name has been revived, justified by the switch from a first to thirdperson viewpoint – something that enables *Heretic II* to go up against the likes of *Tomb Raider III* rather than *Half-Life*. Very sensible.

In fact, first impressions suggest that Lara's adventures have had quite an influence on the Raven team. Hero Corvus can now leap, roll and attack enemies using a familiar auto-aiming function, as well as pull off other useful moves including a variety of climbing, jumping and special attack combos. The range of possible moves is initially incredibly daunting, yet a high degree of context sensitivity and button multi-functionality enables the gamer to exert a level of effortless control rarely seen outside of Nintendo titles.

It's the dedication to providing an action-based experience that really sets *Heretic II* apart. While Core's Ms Croft spends much time exploring and puzzle solving, Corvus' adventures exist purely for the purposes of mystical warfare. Like the *Quake* games, there's a strong gore factor here with spilt blood spurting in all directions, and limbs often flying to the four corners of the screen. Watching a mutant elf run away minus an arm is darkly comic.

The thirdperson viewpoint takes a little getting used to, and the camera system isn't infallible. As with any such game set in enclosed spaces, there are times where the viewpoint comes to rest in an awkward position. However, the character's sprightly responses and ease of control ensure that *Heretic II* is as pacy as id software's efforts.

A leniency with character positioning also helps. Lara's jumps often require pixel-perfect accuracy, but Raven understands that a little generosity makes for a much less frustrating experience. As does the decision to dump a hub-based level design in favour of a mostly linear trip through Corvus' homeworld.

*Heretic II* is by no means perfect. While the environments are beautifully crafted (the *Quake II*-based engine incorporating excellent water and coloured lighting effects), there's a slight artificiality to the animation that recalls the stop-motion monsters in old Ray Harryhausen films. And, while the action rarely lets up, few of the creatures could be described as scary.

Nevertheless, with its mixture of platform and shoot 'em up action, a splendid array of screen-illuminating weapons and spells, and some evocative and atmospheric level design, *Heretic II* is great fun. Almost as importantly, it is different enough to stand out from both the first- and thirdperson crowds. It's pleasantly surprising to discover just how fresh something built from the best of two genres can be.

Edge rating:

**Eight out of ten**

# XENOGEARS



The substitution of sprites for polygons has reinforced *Xenogears*' anime feel










*Xenogears*' fighting game-style combat cleverly disguises what is essentially a variation on Square's well-worn Active Time Battle system

Format: **PlayStation**

Publisher: **Square Electronic Arts**

Developer: **SquareSoft**

Price: **$50 (£30)**

Release: **Out now (US)**



**Although many of the linking scenes in the game are depicted by using traditional cel animation techniques, ingame graphics are also used to great effect**

If *Final Fantasy* represents the cutting edge of both Japanese role playing and console graphical grandeur, *Xenogears* harks back to an earlier SquareSoft age when the gap between each *Final Fantasy* was filled with enjoyable story-led romps, rather than the more recent attempts at experimentation with other genres.

With its full-3D environment and effects-laden battles, it could hardly be accused of being retro, but a sci-fi/ fantasy hybrid setting, epic storyline, traditional cel-animation cut-scenes and strong anime-influenced characters mean *Xenogears* is far more in tune with the archetypal Japanese RPG than *Parasite Eve* ever was.

The story of a stranger raised in a world of war, oblivious to his incredible past, may seem like the offspring of many average anime videos, but the addition of the eponymous mobile suits – typically flamboyant, giant robots piloted by the main characters – is such a stroke of genius that it's amazing that they've never been so well integrated in a game before. Sections of the story must be negotiated in 30ft-high mecha, where the player must worry about fuel loss and parts damage rather than hit and magic points.

As Square seems keen to innovate, so *Xenogears* also benefits from its constant refinement of what remains Japan's favourite style of game. If *Parasite Eve* did prove one thing, it was that the standard turn-based battle format could be taken successfully in new directions, and *Xenogears* offers another imaginative solution to the cumbersome task of picking attacks from a menu. Taking its cue from the fighting game, combat is initiated by single and combinations of button presses, so characters learn 'combos' and special attacks in the same manner as *Tekken* and *Virtua Fighter*. Although still restricted by the 'taking turns' time gauge system, battles are fast, furious and more attractive to gamers daunted by the usual plethora of stats.

While destined never to achieve the mainstream status now enjoyed by *Final Fantasy*, *Xenogears* still manages to entertain just as much and may well end up as the title RPG aficionados will claim as 'better than *FF*' when trying to impress their uninitiated friends.

Edge rating:

Eight out of ten

# R-TYPE DELTA

Format: **PlayStation**

Publisher: **Irem**

Developer: **In-house**

Price: **¥5,800 (£25)**

Release: **Out now (Japan)**



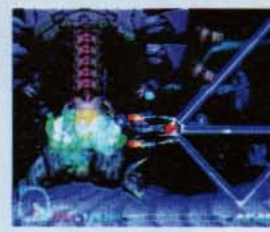




**Outrageous weapon effects are the order of the day – from both the player and the many dazzling enemies**







**A polygonal snake enemy harks back to the first *R-Type* (top right). The Delta weapon in full effect (above)**





***R-Type Delta*'s visual leanings bring to mind not only SquareSoft's classy *Einhänder* but also Konami's seminal SNES scrolling shoot 'em up *Axelay***

In many respects, sitting down to play *R-Type Delta* is like meeting up with a close friend you haven't seen for years. You expect the outward appearance to have changed a bit, perhaps become more distinguished over time, but you hope that, on the inside, little has changed. And so it proves to be the case. Gone are the intricately designed bitmap images of 1987's original *R-Type*, replaced instead by swathes of complex polygon models set against atmospherically alienesque backdrops dripping with vibrant colours. Similarly, the original's weapon effects, which once seemed so outlandish, pale in comparison to *Delta*'s range of attacks, which wash the screen with searing laser effects, crackling energy bolts and overblown explosions.

Underneath all this gloss lies the classic *R-Type* gameplay, along with a couple of embellishments. Chief among these is the eponymous Delta weapon, executable once the player has accumulated enough power to fill the 'Dose' meter. The resultant effect is essentially a gloriously realised smart bomb which, in the grand shoot 'em up tradition, is best saved for use during boss encounters – of which there are many, naturally.

*Delta* also offers three selectable craft to take into battle. The R9a Delta (a revised version of the original R9) is joined by the R13 and the RX, and each has its own melange of attack styles, which are further affected by the game's power-ups (a blue pick-up gives the R9aD the classic diagonal bouncing laser, for example, but equips the R13 with a more direct beam).

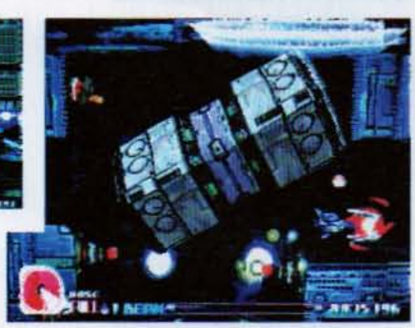
*Delta*'s pacing follows that of the original, presenting familiar attack wave patterns interspersed with more showcase-style sections, which will instantly make old fans feel at home.

Ultimately, despite its graphical trickery, *R-Type Delta*'s central gameplay remains a product of the '80s. Your performance upon entering a new level depends largely on trial and error, and the game is as much a test of memory as it is joypad dexterity. As such, it's refreshing and frustrating at the same time. Which, oddly, has made it one of the most-played games in the **Edge** office for a long while. A fine shoot 'em up.

Edge rating:

Seven out of ten





**Echoing *R-Type II*, *Delta* introduces atmospheric underwater sections early in the game**

# TOP GEAR OVERDRIVE



The pace in this arcade-style racing game is unrealistically swift, and can be further enhanced by nitros









The multiplayer mode is not amazingly playable, but it's better than nothing (above)

Format: **Nintendo 64**

Publisher: **THE**

Developer: **Snowblind Studios**

Price: **£45**

Release: **Out now**







***Overdrive* is the second N64 title to use its RAM Pak. The differences are not remarkable (from top): normal res, hi-res with Pak (full screen in NTSC but noticeable borders in PAL) and hi-res without, hence the heavy letterbox format. The crisper visuals cause a slight framerate drop**

At the time Boss Studios' *Top Gear Rally* appeared on the N64, there was little in terms of competition; yet, without wishing to sound disrespectful to what remains a solid – if nevertheless flawed – game, things have moved on a little since. Which is why *Overdrive* (a 'sequel' developed by Snowblind Studios) doesn't quite make the same impact it may have done 12 months ago.

Still, gone are the vehicles usually associated with Colin McRae's profession, to be replaced by production cars. Initially, only two underpowered and underwhelming vehicles are available, but thankfully their acceleration, top speed and handling can be upgraded with money (collected at certain points throughout the tracks) and rewards (for finishing in the top four). The five circuits – plus a bonus offering – are split into seasons, featuring mirrored tracks and variably hostile weather conditions. As you progress through these your prize fund increases, presenting opportunities to trade up to new vehicles rather than upgrade your existing one. Soon you'll face potentially traumatic episodes such as whether to purchase a Ferrari F40 or save up for a McLaren F1.

Long before then, however, you'll become frustrated with many of *Overdrive*'s shortcomings. For instance, the handling, even for an arcade title, should have been finer, and would have benefited from more progressive analogue control. Furthermore, the opponent AI is inadequate, the multiplayer options aren't the most playable examples of their kind, and starting at the back of the grid (ie 12th) may have been a one-time favourite of coin-ops, but it's unlikely to be welcomed by those whose preferred genre does not feature motor vehicles.

Ultimately, this is a decent and fairly enjoyable addition to the N64's growing motoring scene. Naturally, racing fans will get more mileage out of it than most. With a little more refinement, it could have attracted a far wider audience.

Edge rating:

Six out of ten



All tracks offer short-cuts, though searching for them can often end in tears (above)



## Above board and legal: Law in the development community

Beneath the obvious plethora of technical and managerial hassles that plague software development, there lies a raft of added difficulties waiting to hamper the game-making process. One of these is constructing workable and equable agreements between developers and publishers in such a way that all parties get the best from the deal.

Leading videogames industry legal eagle **Paul Gardner** (below), a partner in the IT and Telecoms Department of law firm Osborne Clarke, has been working with game companies for over ten years, trying to smooth the negotiation of publishing agreements. Now, after witnessing the manifold knots which businesses on both sides of the fence manage to tangle themselves in, he has decided to host a series of workshops to help publishers and developers help themselves. November 1998 saw the first two such seminars being hosted in London.



**Contact Osborne Clarke on 0171 809 1000 for details on future courses**

"We had people from Infogrames, Codemasters and Europress, and from DiD and Simis," says Gardner. "There were some very interesting exchanges and debates going on, with the total number of people there being about 14." And the result? "I think a very useful exchange of views about the issues that come up about publishing agreement negotiations, and probably a much better understanding of the other parties' positions," relates Gardner.

By removing the understandable tensions that such negotiations might bring, the group was able to convey the different worries publishers and developers hold. But in terms of actual topics covered, the workshop's scope was fairly encompassing. "We ran through all the legal issues, ranging from the intellectual property framework that the industry operates in," lists Gardner, "through to the nuts and bolts of negotiating, reviewing and drafting publishing agreements for original products."

Other difficulties, such as slipped development schedules, were also covered during the one-day sessions, as were changes to game budgets and specification. Gardner agrees that, "The [videogames] industry has been behind other media industries in its appreciation of the legal aspect and the issues involved." However, he adds, "It struck me that the group who came along yesterday were much more sophisticated than they would have been even five years ago, with quite a high level of appreciation for the points that needed to be covered."

And Gardner's reason for running the workshops? "I've been working in this industry for 12 years now, and frankly, a lot of the problems that have arisen could have been avoided through a relatively small amount of work. It's very much 'a stitch in time saves nine' principle."

## Workstation

So far, **Edge**'s peeks at the working quarters of the development community have concentrated on individuals working in the west. This month, however, it's the turn of two Japanese creatives from Konami's *Silent Hill* team: background designer Masashi Tsuboyama (workstation, left) and CG designer Takayoshi Sato (workstation, right)

**High-grade model figures** "They are figures of nostalgic characters. Not only are they nostalgic, but they are also very well designed. I spend a lot of time in front of my desk, and I like to decorate my spot with my favourites – just like crows when they build their nest."





**Disturbing-looking head model** "I created this object during my student days. It is a 3D map of the various areas of the brain, made of sponge. Anyone's brain has these fields of specialty. The fact that it is placed on top of a computer is the irony present between our job and the coming future."

## The trials of a start-up developer: part five



**After co-founding Lionhead Studios with Peter Molyneux, Demis Hassabis set up his own development house, Elixir Studios. On his return from E3, he realises the company is in need of professional help…**

### Back to business

"With the wind in our sails following a successful E3, it was important to get started as soon as possible. There were still gaps in the team, though, so I redoubled my efforts to find the right people.

Nick Sturge was a friend of mine from college and because of this, I'd presented Elixir to him without any of my usual embellishments. I didn't want to feel responsible for turning his life upside down if things didn't end up quite as planned… I was delighted when he agreed to take the role of technical manager, turning down other attractive job offers in the process. It was comforting to know that he could see the adventure that lay ahead and it wasn't just my vision. Inane grins, extreme dedication to his work and a large dash of eccentricity meant that he would fit in perfectly with the others.

Ian Maber would fill the only remaining hole in the team, namely the art side. I had first met him when he was art director at Psygnosis. The timing seemed to be perfect, as he had left Psygnosis a few months previously and was ready to get back into development again. Apart from his obvious skills, his vast experience and contacts in the art world would later become invaluable. He'd be able to assemble a great team of artists and ensure that we had the right equipment and software.

From past experience I know that negotiating with publishers is an exhausting experience. If we wanted to get started before signing a deal, we would need some interim funding from elsewhere. To this end I contacted Stewart Block, a heavyweight businessman, referred to me by a friend. He heads up an organisation called AEN (funded by the St John's Innovation Centre), that helps start-ups with Cambridge University connections to get seed funding. His background in business is exceptional, much of it gained at an engineering group called BTG, which he had helped to float on the Stock Exchange. He was really excited by our proposal, so much so, in fact, that he wanted to invest himself. I offered him a position as a non-executive director and he joined the board of Elixir. His management experience would be a huge asset to us.

Joining Stewart on the board was Nick Gibson, one of the most respected City analysts on the Internet and games industry. His authoritative style and knowledge of the industry was extremely impressive and I thought he would be of immense worth to Elixir. His role would encompass advising us on all funding issues and any market research we needed. We also appointed a part-time financial director in Vijay Shah. He's an old family friend, a chartered accountant with his own firm and has over 30 years of experience.

The last thing I had to sort out was the legal side. Stewart already had good connections with a law firm so we arranged a meeting with one of the senior partners Dan Teacher and his associate Martine Nathan. Despite the 'This Life' image, lawyers are very often some of the most boring and pedantic people you could ever meet. However, this meeting turned out to be completely different. Dan and Martine were very enthusiastic and I took a liking to them immediately. I explained that we had a problem. There would be some serious and time-consuming negotiations with publishers ahead of us, yet we wouldn't have enough money for the huge fees that these would rack up. They thought about this and then came up with a highly unusual arrangement. They would waive their fees in exchange for a tiny equity stake in the company. Furthermore, Dan wanted to invest personally. This suited us perfectly; our lawyers would actually have a material interest in the welfare of the company. Furthermore, we took the fact that astute professionals were willing to take this sort of risk with us as a huge vote of confidence.

**"It was now the last week of June. That gave me ten days to find 11 P-400s, all the development software and, of course, 1,000 sqft of office space"**

But what's all this got to do with games? Despite what you might think, the business side of things is as important as the games themselves. It has been the undoing of many a failed development team. We could make the best game in the world but without the business behind it, we could end up being shafted by someone. Having a heavyweight team of 'suits' behind us is amazingly comforting. They're an integral part of Elixir – if we need advice on any topic we have an expert on hand to give us their considered opinion.



Keen to share in the 'adventure', Nick Sturge joined the development group as technical manager

So things had gone better than I could dared to have hoped for. We had all the initial funding and the right people. I had loosely promised everyone a start date of July 7 and it was now the last week of June. That gave me ten days to find 11 P-400s, all the development software and, of course, 1,000 sqft of office space. On top of this, follow-up meetings with the publishers were due very soon and I had a lot of work to do on fleshing out the game designs beforehand. These things seemed trivial compared to what we'd been through to get to this point. I could barely believe it: six months of hard graft and finally it was going to happen. Now for the difficult part…"

## Edge moves

Programmers, artists, engineers, producers, animators, project managers – they're all essential to the industry, and they all read **Edge**. The following pages carry a phenomenal variety of jobs for graduates, professionals and any other interested parties who think they could make it in the videogame scene. Apply within…

# STAR WARS TRILOGY

## AS THE WORLD COUNTS THE DAYS UNTIL THE STAR WARS PREQUELS, SEGA CONTRIBUTES ITS SHARE

**Developer:** Sega (AM Annex)
**Release:** Out now (Japan)
**Origin:** Japan











**Some of the trilogy's best-loved set-pieces have been faithfully reproduced, resulting in a coin-op that offers a refreshing variety of gameplay styles**

Despite the currency of its subject matter, *Star Wars Trilogy Arcade* didn't enjoy a good reception at the last JAMMA show. Under the direction of new general manager Kenji Sasaki, AM Annex has been hard at work on the gameplay and graphics – weaknesses that the earlier version had been loudly criticised for.

Three of the game's six levels are available initially – Yavin (destroy the Death Star), Hoth (terminate the Imperial Walkers) and Endor (neutralise the Shield Generator). Once completed, two bonus stages follow, taking the form of lightsabre duels against Boba Fett and Darth Vader, played out in a firstperson perspective. Needless to say, sharp reflexes are required to counter the increasingly frenzied assaults of these daunting opponents.

Fittingly, the final stage recreates the epic all-out assault on the Death Star's main reactor – but before taking to an X-Wing fighter to engage in this climatic battle, you must hitch a ride in some of the trilogy's other famous vehicles, including Speed Bikes and Snow Speeders. Rather than take responsibility for the navigational duties, though, your task is to shoot any enemy units you may encounter.

Not only has Sega included a healthy variety of game styles to keep players interested, but much emphasis has been placed on achieving a balanced structure throughout. As such, the difficulty level automatically adapts itself to the player's skill, although better players also get rewarded: provided enough points have been accrued, additional firepower can be called upon at a touch of a button.

Now that the criticisms have been addressed, AM Annex's first venture outside the racing scene has become a compelling game, and one that should keep 'Star Wars' fans busy until 'Episode 1' arrives.







**The firstperson lightsabre sections (centre, above) require lightning reactions, and work a lot better than might be expected**







**Weaker players needn't feel intimidated – *Star Wars Trilogy Arcade* adapts itself to your skill level, so that while still providing a certain challenge, it shouldn't prove impossible**

# LAST BLADE 2

## CONTINUING ITS ASSAULT ON THE BEAT 'EM UP WORLD, SNK RETURNS WITH ANOTHER SEQUEL

**Developer:** SNK
**Release:** Out now (Japan)
**Origin:** Japan





**As with most SNK titles, *Last Blade 2* should appeal primarily to the masses of diehard arcade 2D fighting fans**

After the *Samurai Spirits* series left the 2D world behind with the 'promise' that all would be better within a 3D environment, SNK wisely attempted to appease diehard 2D-heads by introducing a potential replacement. *Last Blade* was released on the Neo Geo and was a technically accomplished title, particularly on the graphical front. But then SNK has long been the master of development on its own hardware…

Visually, *Last Blade 2* is a step ahead of its predecessor. However, SNK has put most of its effort into gameplay refinements which become obvious very quickly. There are now more airborne attack moves – and anyone caught by a counter-offensive while in mid-air can, with a few joystick commands, fall back on his or her feet. Naturally, the combo system has been renewed in order to keep fans of the original interested, with an additional ability to cancel attacks. Other additions extend to four new characters – Sanada, Setsuna, Takane Hibiki and Mukuro – joining the original 12 combatants.



**The graphics are better, but most effort has been channelled into gameplay**



Interestingly, once you've selected a character you get to choose between a 'technical' or 'brutal' expertise before entering the ring. Select the latter and your chosen fighter has a complete arsenal of attacks at their disposal. The technical option, meanwhile, offers a range of offensive and defensive moves that require you to employ a more thoughtful approach.

There is nothing in *Last Blade 2* that will revolutionise the beat 'em up genre, but it does offer a solid, playable experience – just like the *Samurai Spirits* series.

# FIGHTING LAYERS

## IN JAPAN, THE BEAT 'EM UP IS KING – WHICH IS WHY ARIKA IS BUSY WORKING ON ANOTHER ONE

**Developer:** Arika
**Release:** TBA
**Origin:** Japan

Developed by beat 'em up specialist outfit Arika, *Fighting Layers* was one of the bigger surprises of JAMMA's Namco booth (the latter's role is that of distributor only). In 3D fighting game terms, *Fighting Layers* is fairly classic stuff, aimed at a hardcore audience; the cabinet's six-button configuration allows the usual punch, kick and throw approach, but Arika has implemented a 'special attack' and 'cancel' gauge-based system usually associated with 2D beat 'em ups. Other facets, including the 'Edge Combination' feature, which combines different attacks, and 'Super Evolution', which enables you to teleport to another part of the stage (as long as you're not in the middle of an attack) are interesting, but not entirely original.

In order to woo players who prefer a more guarded style, Arika has included a defensive gauge which enables points to be saved from successful defensive moves, then used as part of an offensive action. One such move is the 'Hard Reversal', which freezes time, allowing you to batter your opponent with impunity.

*Street Fighter* fans will be interested to discover two characters from the *SF EX* series among *Fighting Layers'* 12 combatants, although they're more likely to be attracted by the complex gameplay on offer, which mirrors Arika's previous work for Capcom. This alone should guarantee it success in Japan.





**Although previously associated with 2D beat 'em up giant Capcom, *Fighting Layers* sees popular developer Arika exploring new avenues**



**Many aspects, including the game's combo system, originated in 2D titles**



# HOUSE OF THE DEAD 2

## CHAINSAWS, BLOOD AND ZOMBIE MASSACRING. SEGA KNOWS A GOOD THING WHEN IT SEES IT

**Developer:** Sega (AM1)
**Release:** Out now (Japan)
**Origin:** Japan

Sega's follow-up to its Model 2-powered zombie lightgun shoot 'em up is the most eagerly anticipated title of the quartet of games it announced at the recent JAMMA show. Unusually for a first appearance, it was a playable demo. Given the 'on-rails' structure of the game, *House of the Dead 2* cannot be taken as a measure of the Naomi board's true performance – but it does look stunning.

The principle is the same: as either James or Gary, you have only your guns to protect you from the bilious denizens of a haunted house. Your actions dictate the direction you take through the mansion, so it's unlikely that players will follow exactly the same route in successive games. The finished game should adapt to the player's skill level, which should please those who found the original too challenging.

The arcade scene is about to be hit by an onslaught of horror titles aimed at the growing gore-hungry gaming sector, and Sega could have a winner here.





**House of the Dead 2's imagery ranges from unpleasant (above) to borderline twisted (right)**





**The preordained routes through the game enable Sega to deliver a succession of blood-spattered set pieces**

# Virtua Fighter

The advent of complex, smooth-moving polygons on home systems may now seem a distant memory, but it's one worth remembering. The generational leap gave birth to many legendary series, not least one from Sega...







**Dural (above) first made an appearance in *Virtua Fighter* – although the difference between this incarnation and that of *VF3tb* is now painfully palpable. One of the game's biggest contributions to the genre was the Ring Out (left)**










**It may not be the fairest of tactics, but pounding your opponents while they were down (above left) was introduced in *VF* – and actively encouraged**

While it's easy to look back at the likes of 1985's *Way of the Exploding Fist* and immediately see just how far technology has since moved on, looking back at the Saturn conversion of *Virtua Fighter*, released in Japan in November 1994, elicits a surprisingly similar response. With polygons now established to the point of being the bread and butter of videogaming, Saturn *Virtua Fighter*'s character models, each constructed from around 1,200 flat-shaded surfaces, look rather limp.

Nevertheless, *Virtua Fighter* did represent a generational leap, being the first game to use polygons to represent human beings and not spacecraft, planes or Formula One cars.

Although Namco's polygonal racer *Winning Run* appeared in 1989 – three years prior to *Virtua Racing* – Sega still lays claim to pushing back the boundaries of videogame visuals. "Sega completely revolutionised the game industry with polygon graphics," reckons the company's **Hideki Sato**.

"By using polygons we made some dogfight games and racing games, then we looked for the next step," he relates.




"So we decided to draw humans in 3D. Until this game we were not strong for fighting games. We tried to imitate some Capcom games, but you cannot become number one by imitating others, which is why we used polygons."

Graphics aside, *Virtua Fighter* introduced many of the elements that have become staples of the 3D beat 'em up. Its range of elaborate throws and slams were immediately cribbed by Namco for the *Tekken* series, while its 'serious' combat moves (projectiles were completely out of the question) set a fresh precedent in the wake of the likes of the outlandish *Street Fighter II*. It may have been a 2D experience in gameplay terms, but *Virtua Fighter*'s presentation alone ensured its status as a genre-defining title.













**Flat environments ruled *VF*'s day, but Sega attempted to introduce variety between stages (left column). Count the polys in this model (above right)**

| Publisher: Sega | 1994 | Developer: In-house (AM2) | Saturn |
|---|---|---|---|

## Aiwa CSD-MD5 CD/MD Radio Receiver

**Contact: 0990 902902**




It looks like tape has finally met its match, with MiniDisc fast becoming de rigueur in everything from hi-fi separates to mini-systems, personal stereos and in-car setups. And it's not hard to see why. The tiny optical disc is robust, increasingly cheap and offers the advantages of CD in terms of sound quality, while offering user-friendly recording features to boot. What other format gives you the ability to record, combine, move and name individual tracks with such transparent ease?

Aiwa's CSD-MD5 portable stereo is the latest in a long line of 'ghettoblasters' that uses MD technology. Open the motorised flap at its centre and the user's greeted with an array of buttons and dials that makes recording from the system's built-in FM/AM radio and CD player a cinch. Sound quality from the 8W stereo speakers is good and there's a range of sound modes – including a pseudo-surround function – which further enhances your listening experience. The only limiting feature is the system's portability – mains-only power means it can't be used on the move.

## Sharp VL-PD1H MiniDV Camcorder

**£820 approx Contact: 0800 262958**

Scarcely a month goes by without some electronics company or other announcing the launch of the 'world's smallest camcorder'. But camcorders are only getting smaller, lighter, more user-friendly and feature-rich, because they use MiniDV digital tapes – a format that not only delivers studio quality recordings, but is also only just bigger than a matchbox.

The pick of the recent MiniDV crop has to be this, Sharp's VL-PD1H. While most camcorders force the user to fiddle with increasingly small and inaccessible buttons, the Sharp comes with a four-inch touchscreen display which uses 'virtual' buttons that enable the user to do everything from zooming into a particular part of a scene to altering the colour and light settings. Add a raft of picture effects and brilliant image quality and you're left with a very fine machine indeed, only the sound quality – with its hints of background motor whirr – disappoints.






New government rules mean that manufacturers are no longer obliged to provide recommended retail prices on certain consumer electronics products.

## Pioneer DV-717 DVD player

**Contact: 01753 789500**

The UK still has a long way to go before it catches up with the range of DVD movies and machinery available in the US and Japan, but it's catching up quick. Available now, is the first of the so-called 'third generation' players which promises plenty of additional features and improvements over models available so far.

The DV-717 is certainly competitive. It should hit the shops considerably cheaper than many of its rivals, yet comes with the kind of features found on pricier machines, such as digital noise reduction, a block filter and horizontal sharpness control which help improve DVD's already impressive picture quality. Sound isn't neglected either, since the DV-717 also comes with a comprehensive set of socketry for making the most of Dolby Digital and MPEG2 surround soundtracks. Best of all, it can also playback DTS (Digital Theatre Sound) soundtracks, which are fast becoming the surround-sound of choice for movie fans. The fly in the ointment is the fact that you need some DTS discs to play on it…




## Siemens SL10 GSM Mobile Phone

**Price: £200 (with network connection) Contact: 01344 862222**




One of 1998's bigger trends has been the arrival of 'clever' mobile phones. Dual Band, a gizmo that enables phones to operate on more than one network by using two different frequencies – proved just the job for those who need to stay in touch abroad.

The most striking thing about the SL10 dual band phone, then, is its unusual design. It comes in a 'split' case with an LCD display in the top half and dialling buttons below. This not only enables the phone to have a smaller profile, but protects the buttons from being pressed accidentally.

The phone is also simple to use. The colour LCD display is pale but distinct, while the interface can easily be picked up by the most phone-phobic within a minute or two.

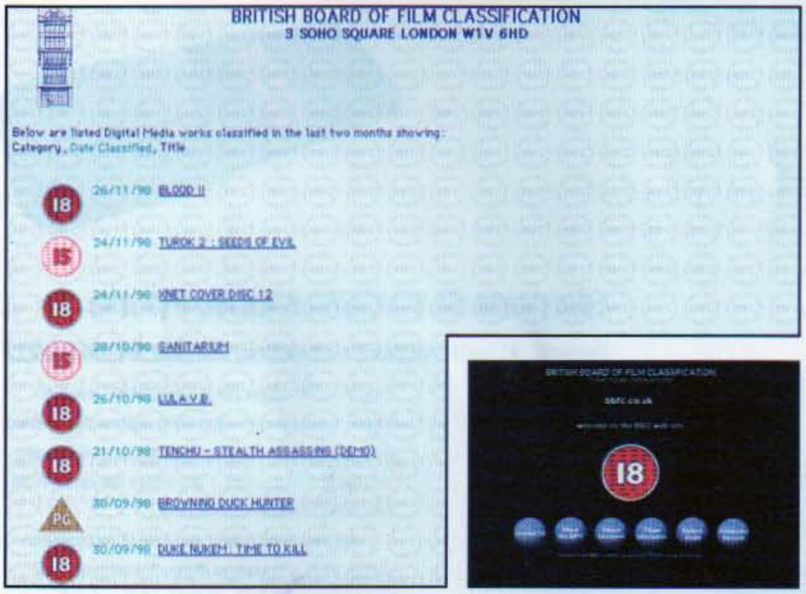
Speech quality is pretty good, although the battery life at 40 hours standby and three hours talktime is a little lacking compared to Nokia's sleeker 8810 (**E**65).

**Edge** has attempted to state prices wherever possible, but for up-to-the-minute information, check adverts in the national press or contact your local consumer electronics dealer.

## In a class of its own

**UK:** Following last month's interview with BBFC president, Andreas Whittam-Smith, **Edge** decided to delve a little deeper into the way the BBFC actually classifies videogames.

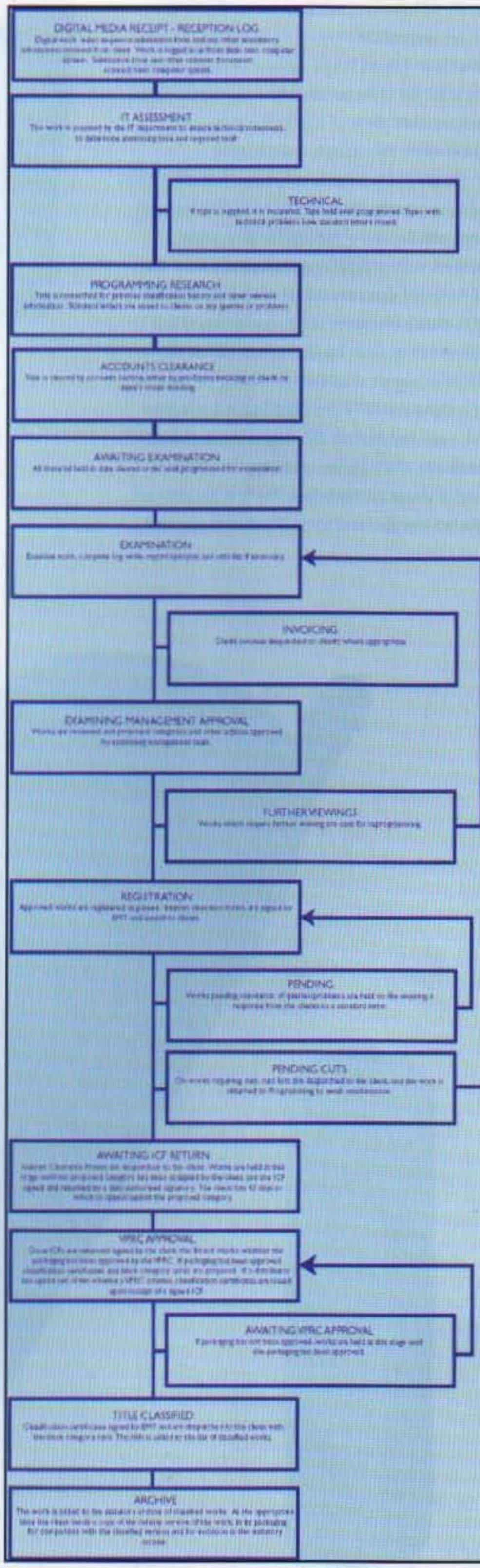
A little probing around the board's Website revealed a simple flowchart detailing every step of the classification process. Predictably bureaucratic in places, **Edge** wasn't at all surprised at the amount of arrows used to depict a fundamentally simple process. However, a quick glance at the fees requested by the BBFC for following those arrows proved a revelation. The standard rate for classifying (ie playing) a videogame is £1,755 for four hours' interaction, while simpler works (requiring merely 120 minutes of assessment) can be rated for a bargain £1,053 (that's nearly £9 a minute). And that's excluding VAT. Now, if only journalist rates were even nearly as good…


BRITISH BOARD OF FILM CLASSIFICATION
3 SOHO SQUARE LONDON W1V 6HD

Below are listed Digital Media works classified in the last two months showing: Category, Date Classified, Title

18 26/11/98 BLOOD II
15 24/11/98 TUROK 2 : SEEDS OF EVIL
18 24/11/98 KNET COVER DISC 12
15 28/10/98 SANITARIUM
18 26/10/98 LULA V.R.
18 21/10/98 TENCHU - STEALTH ASSASSINS (DEMO)
PG 30/09/98 BROWNING DUCK HUNTER
18 30/09/98 DUKE NUKEM: TIME TO KILL






The games awarded ratings (above) and the Flowchart for the Classification Process of Digital Media (right)

### Lara goes to bed

**UK:** Silicon implants have a lot to answer for. Lara Croft might be a grossly exaggerated version of the female form, but her prolific 'rise' as a celebrity – which has seen her appearing on chat shows, in fashion spreads and on coffee tables – can be compared to that of fellow media marketing dollies Melinda Messenger and Emma Noble.

Now, however, Core has become confident enough to sell its wares on the strength of the Lara 'look' alone – witness its new lifestyle advertising campaign (right). Has having a passion for videogaming reached a new low?



# Sega hosts a flash (beats) party



Sega's new solarium simulation attracted many eager tan-seekers

**Japan:** To celebrate the announcement of several new arcade titles, Sega held a private party in Tokyo's Hamamatsucho (New Pier Hall) in late November. Although dominated mainly by the latest creations from Sega's prolific AM3 division, the party was also notable for the first game from fledgling group AM4, *Flash Beats*.

Featuring five long neon tubes atop a table, *Flash Beats* is a twoplayer electronic mixture of ping pong and snap. Seriously. By hitting one of five corresponding buttons, you send a coloured pulse of light to the other player who must react in time and return the pulse. Backed by a pulsing backbeat that comes pounding out from under the table, *Flash Beats* understandably attracted a lot of curious onlookers.

Also on show was a new 'Power Edition' of the disappointing *Daytona USA 2*, with the added feature of being connectable online. AM3 games, meanwhile, included *Gunblade* sequel *LA Machineguns*, *Crazy Taxi* in which you control, well, a crazy taxi, and yet another special cabinet game, *Magical Truck Adventure*. Developed by the team responsible for Sega's *Lost World* license, *MTA* has the player controlling the truck with their arms while kicking objects with their legs. Arcade games, it seems, have found their feet. Or yours, at least.

## Don't panic

**Japan:** Mind-controlled computers have long been a classic image of science fiction. While it's not quite touching that level of sophistication, Seta's new take on the *Tetris* franchise (as if there haven't been enough already) takes console gaming just a little bit closer to that goal.

The 'bio-sensor' that comes with the game is essentially a pulse monitor, connected to the N64 via the joypad's expansion slot and to you via your earlobe. As you play *Tetris*, the unit measures your heartrate and alters the number and shape of the upcoming piece accordingly. Rumours of a strip poker title that uses the bio-sensor are, as yet, completely unfounded.




Seta's bio-sensor for *Tetris*: the first step on a slippery slope to Nintendo mind control?

# Off beat




Modified's all new *FrEQuency '99*: a sad case of nice beats, shame about the face. Decidedly non-interactive multimedia...

**UK:** Nestled amid the flotilla of 'rave culture' multimedia that has sailed forth on an ill-advised course towards the world's PCs, 1996's *FrEQuency* and stablemate *Chillas* were the high points. Now codeshop Modified has a sequel for the former title, unexpectedly tagged *FrEQuency '99*.

Pouring out a stream of audio and visuals for you to tweak at will, the updated version is, essentially, a stripped-down sequencer preloaded with hundreds of – very listenable – samples. You're able to cycle through all manner of combinations of beat, bassline and melodies to create mixes which can then be saved out as MP3 files. In addition, it's possible to hook up to Modified's Website (www.modified.com) and download extra samples to expand the package's range.

Which would be all well and good were it not for the fact that the user interface is, frankly, dire, consisting as it does of several gloomy, 256-colour 'mixing studios' which demand that you click on various parts of them until something happens. Not very rewarding.

It's a genuine shame that the amount of effort obviously thrown into developing *FrEQuency '99*'s audio capabilities wasn't matched by the interface, because there's a lot in the program to discover. But after a frustrating session spent shuttling back and forth between alternative screens, **Edge** gave up. And if you're able to work out what to do when playing with this in a suitably 'enhanced state of mind', then it's probably time to find a new supplier...

### Miniature Spirits

**Japan:** After appearing on SNK's Neo Geo, Neo Geo CD and Neo Geo 64, it seems sensible that *Samurai Spirits* should grace the neat Neo Geo Pocket handheld. There's been an obvious downgrade in the graphical quality, but the gameplay is still worth investing time in. Twoplayer games are supported via the Pocket's link cable, along with the usual beat 'em up modes. And while the display is monochrome, you don't have to suffer the slowdown that seems to afflict some Game Boy Color titles...










## Love at first fight

**Japan:** The release of *Virtua Fighter 3tb* for Dreamcast gave **Edge** a welcome excuse to amble down to its favoured coin-op shops in Tokyo's Akihabara electronics district this month. As ever, the range of titles on offer was astounding – in terms of both price and breadth. For arcade addicts, there's no greater satisfaction than actually owning a complete cabinet – MAME doesn't even come close.

Although you can only play one game, the asking price of around ¥60,000 (£300) for a complete *VF3tb* ROM and adaptor board seems tantalisingly low compared to the ¥46,300 (£230) Sega is asking for Dreamcast, the game, and two arcade sticks. (However, it must be noted that a special 24MHz display is needed for Model 3 games.) Meanwhile, *Virtua Fighter 2* is priced at an even more reasonable ¥28,500 (£145) while a *Spikeout* ROM – for seriously wealthy beat 'em up fans only – will set you back a cool ¥480,000 (£2,400).

Older titles are readily available, too. Classic Capcom CPSIII titles such as *Street Fighter Zero*, *Vampire Saviour*, and *Marvel Super Heroes Vs Street Fighter* are priced between ¥1,500 (£7.50) and ¥25,000 (£125). Japanese coin-op fans with a stash of cash are able to build an enviable library of games for less than the price of a secondhand car. Dreams, surely, are made of this.












Clockwise from top left: Otaku can opt for the full-monty cabinet; or buy a chunky TV adaptor instead; many recent titles are available; smaller boards such as Capcom CPS games are shelved; Model 3 is relegated to a cardboard box

## Bringing game sound to life

**UK:** After going through a period of relative inactivity in the PC soundcard market, Creative Labs has swept its competitors aside with its new creation, Live!, which has – deservedly – received widespread acclaim (see p77). At its most effective when paired with a set of surround-sound speakers, such as the Cambridge Soundworks Speaker 5s shown here (also sold through Creative Labs), the card is capable of several DSP effects. Reverb, chorus and delay are all standard features, as is support for surround sound via a system called EAX, which is a major advance over the current A3D standard used by other manufacturers.

It's this last aspect of Soundblaster Live! that's of most interest to gameplayers, as it really can enhance the experience offered by leading titles such as *Half-Life*. Firstperson shoot 'em ups are ideal testbeds for the card, with bullets zinging from the front to back speakers and footsteps echoing down hallways. Where A3D can deal with eight streams of audio, Live! can handle 32 through its four speakers. Impressive stuff – especially with the volume cranked up to the max.

The creatively minded will be pleased to note that Soundblaster Live! is supplied with several pieces of software for sound editing and sampling, and has a set of MIDI connectors. However, for the purpose of playing games there's little out there to rival Live!'s sweet sonics.



The Soundblaster Live! card and Cambridge Soundworks speakers are keenly priced at £200 as a package deal. Oh, you need a PC too

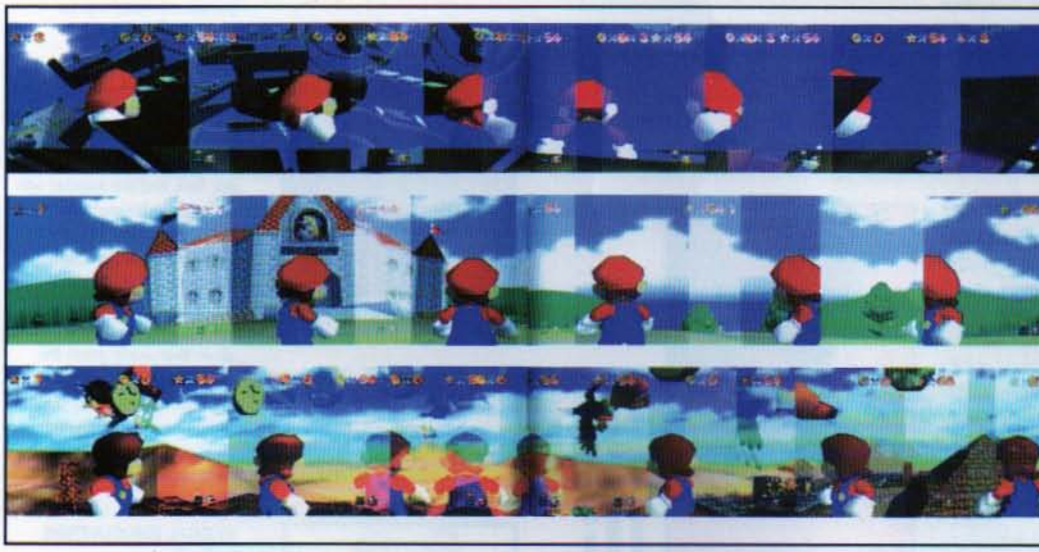
## Valuing videogame visuals

**UK:** The seemingly unstoppable permeation of videogames into mainstream culture is being recognised not only by musicians (U2 and Dave Stewart famously having elected to work with Lara Croft in one guise or another in the past) and acclaimed modern artists (Damien Hirst recently spoke of phoning Core to request a copy of *Tomb Raider III*, only to be told that he'd have to buy one just like everybody else) but more increasingly by authors looking to analyse the phenomenon in print.

Following JC Herz's largely tawdry gaming chronicle 'Joystick Nation' comes 'Re:play – Ultimate Games Graphics', a volume which, as the title so obviously implies, concentrates on the aesthetic aspect of the videogame experience. Compiled by Liz Faber, the book reproduces a remarkable selection of imagery from games ranging from modern-day classics such as *Gran Turismo* all the way back to the irrepressible *Pong*. And it's a lavish publication, rammed to bursting with glorious grabs and presented with slinky design values courtesy of London-based team State. Definitely something that will sit happily next to **Edge** on the coffee table.

*'Re:play – Ultimate Games Graphics' is published by Laurence King and retails at £20 (ISBN 1-85669-140-3).*











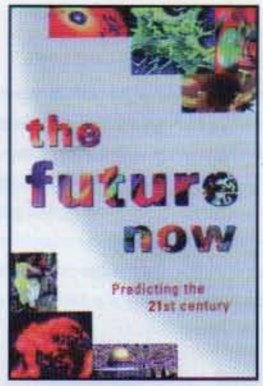

Once upon a time a publication such as 'Re:play' would have seemed ridiculous, of course. Looking like this, though, it suddenly makes sense

### THE FUTURE NOW

Predicting the future is the most dangerous activity that social commentators can undertake. Once down in print, the soothsayers' wisdom has a nasty tendency to be compared to the reality ten years down the line. Good luck then to the various authors of 'The Future Now' for attempting to predict what will be happening in 2010.

Originally published as a series of ten separate pamphlets, 'The Future Now' covers a discordant collection of subjects, ranging from cosmology to the middle east, warfare, disease and the media. However, as the individual authors attempt to argue how it *will* be in the future, they in fact end up chronicling current thinking.

The one certainty about the future is that it's not going to be boxed in by the present. Yet, few of the chapters grapple with the shocks that technology will cause. There are strong arguments that technology as a whole, and the computer specifically, have radically altered the present and will shape the future. So even if the events of the 21st century are unknown, the undercurrents that will produce them are already in operation.



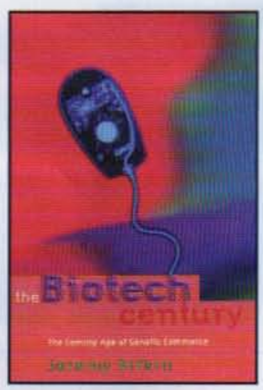

**Author: Various**
**Publisher: Weidenfeld & Nicolson**
**ISBN: 0 297 84271 4**

### THE BIOTECH CENTURY

Just as the world gets to grips with one technological revolution, it appears that another one is just around the corner. Silicon is now passé, long live the new carbon-based life forms produced by recombinative DNA splicing. The Geep, genetically half goat – half sheep, has already been created, and it's only going to get weirder.

Or so says veteran American watchdog Jeremy Rifkin. Known for his robust attitude towards technology and multinational corporations, Rifkin's tendency to dwell on abuses of power has made him a controversial figure in the US. However, with the recent cloning of Dolly the sheep and genetically modified food in the supermarkets, the first wave of the biotech century is already here.

Much of Rifkin's concern centres on the breaching of the species barrier allowing genes from one species to be introduced into another. In turn these experiments will raise fundamental questions about what it is to be human. If the result of the Human Genome Project is the blueprint for the 'perfect' human, what impact will that have on the mass of genetically imperfect people? The tone of the book is not alarmist, though. Rather it informs so that you can influence the science and shape the future you want.




**Author: Jeremy Rifkin**
**Publisher: Gollancz**
**ISBN: 0 575 06658**




**VHS**
**Tekken The Motion Picture**
**(AD Vision)**

It's hard not to be disappointed with this manga release. Although it focuses on three characters, irritatingly, some of the more interesting *Tekken* stars (Yoshimitsu, for example), are rarely seen, and then only as part of the background. A criminal amount of the characters remain totally untouched.

Unfortunately things don't improve from there. Plot wise, the one-dimensional offering wouldn't keep a cartoon-starved 12-year-old interested, and the rudimentary animation is likely to have you reaching for the remote control's eject option long before the end credits.

Oddly, for a film based on a such an astounding beat 'em up, fights between characters are not only rare, but brief, tedious and lifeless. And anyone even remotely interested in videogames knows that the *Tekken* series deserves a whole lot more.




**MAGNETIC**
**A La Magnetica**
**(Recordings of Substance)**

Pegged as an Aphex Twin-like technical minimalist, there is a sparse beauty to several tracks on 'A La Magnetica' that recalls the Twin's early works. Although the textures used here suggest a more modern approach. 'Takeshi Beats' in particular manages to build up a fantastic mode with basic ingredients. And a love of freeform rhythms ensures that, as mood-led as this is, it's never going to be filed under 'ambient'. Magnetic is a name to watch out for.



**FREDERIC GALLIANO**
**Electronic Sextet**
**Live Infinis**
**(F Communications)**

Having brought live instrument jazz, funk, and latin together with electronically-minded house on the 'Espaces Baroques' album, here is a compilation of recordings from various jazz festivals. There are acid squiggles and brazen beats, but this is a more organic album than usually graces the pages of **Edge**. Stretching the material into new forms, Galliano and his band pump out cool vibes with trumpet, vibrophone, and live percussion. 'Nice'.




**FYZICAL ENCOUNTERS**
**Various**
**(R&S)**

Darker and deeper than most, this drum'n'bass collection from R&S is an appropriately techno-flavoured set. Bringing together some of the more leftfield 12"s from the label it demonstrates just how much the two genres are fusing, with collaborative offerings from Ed Rush & Optical as well as other purveyors of this harder sound. The harshness may turn some away, but behind the beats there's much to admire.



**KRUDER & DORFMEISTER**
**The K&D Sessions**
**(Studio K7/G-Stone)**

'The K&D Sessions' brings together the laidback duo's remix work to date. Nobody is safe from the jazz cigarette approach, be it Depeche Mode, Lamb or even Roni Size. Their technique involves stripping out all aggression from the original music and dropping in a friendly dollop of jazz or latin-infected rhythm. Inexplicably, Kruder & Dorfmeister somehow make this the soundtrack to the perfect night in. The vinyl alternative to Radox.

# **VIEW**POINT

EXPRESS YOURSELF IN **EDGE** – WRITE TO: LETTERS, **EDGE**, 30 MONMOUTH STREET, BATH, BA1 2BW (email: edge@futurenet.co.uk)

I felt that I had to write in to respond to Adam Wright's letter defending the PlayStation's reliability (**E**66). He appears to assume that, because his machine did not suffer an early demise, all owners with faulty machines have created this situation by mistreating their consoles.

I had my machine replaced out of warranty (from the shop I bought it from, not from Sony themselves – I phoned their helpline and they were not interested whatsoever), because I produced tens of letters from magazines listing the same problem. I also own a Saturn which has worked flawlessly and I have not heard or read of reliability problems with Sega's machine at all. Adam states that Sony redesigned the machine to prevent the problem. If that is true then why did Sony not relate that to their customers experiencing problems? I know that they do not want to admit that the design was unreliable in the first place, but I sold the replacement machine immediately as I had no confidence in buying new games when I could not be sure that the machine would play them for long – and I wonder how many owners did the same.

I think it is Sony's blatant disregard for its customers which is the main issue here, not the fact that the machine was unreliable in the first place. I, for one, will not be considering PlayStation 2 when it appears, solely for the reason that if there are any problems, then Sony will leave the customers with crappy bits of kit.

**Andy Miles,**
**via email**

Ten pounds says you won't be able to resist Sony's next console...

While browsing at my local branch of Game, I became aware that all of the games on display were horribly crap, with no real content, simply good graphics.

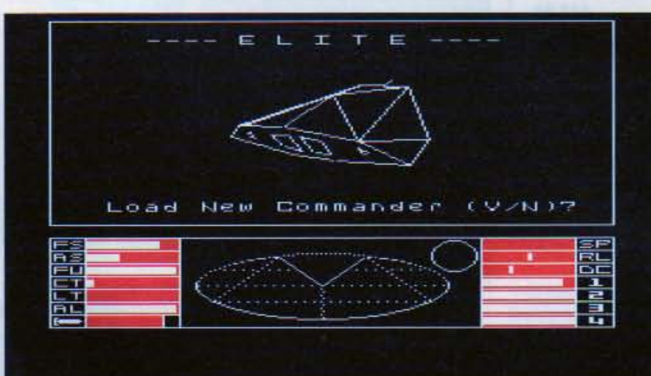
I then began to realise that some of the best games, such as *FFVII* or *Theme Park*, weren't on display when they were first released. I then began to ponder if displays like this, which are found in almost every videogame store, can have an effect on the publishers that push towards more graphical content rather than gameplay. This may be a fair point, but, even if this point were raised to videogame stores such as Game, would it really make a difference? I feel that the answer is no, because many of today's gameplayers weren't playing videogames five years ago when the PlayStation and N64 didn't exist.

There must, therefore, be a market for these games which are generally simply clones that lack ideas and imagination.

**John Swan,**
**via email**

Yes, marketing is a wonderful thing. How else do you think Electronic Arts is able to sell three versions of *FIFA* in one year?

'During a session on *Micro Machines V3* it occurred to me that the **Gouraud shading** was of a higher quality than I remembered. I tried it on the beach stage and before my eyes a **perfectly shaded** landscape was being rendered!'




Just to prove his commitment (if that's the correct word) to gaming, Ron Picnic has just one more thing to say about *Elite*

I always look forward to new issues of **Edge**, although since you seem to have dropped the Apple Macintosh from your columns (and front cover), the anticipation of your magazine arriving in the shops seems to have dulled somewhat.

Although the Mac has been through some rough spots in its long history, it is still a very capable machine. (Telling you this is absolutely pointless, of course, as you already know it.) Let's face it, there isn't a column in your own magazine which has not either been written, edited or published on one of Apple's finest. (G3s, if the contact column is anything to go by – very nice!)

However, to discount the Mac as a non-starter on the gaming scene no longer holds water. With the arrival of the iMac, interest in Apple's machines is stronger than ever, and with games such as *Tomb Raider II* and *Unreal* (to name but two) appearing on the market, people have to take notice of the growing situation that is happening.

I'm not asking for much. A column or two a month would suffice – I feel it's all you can do to support the company which essentially makes you your money.

**James Duffield,**
**via email**

Apple makes **Edge** its money? Hardly. And it's not as though the magazine has ever really committed to covering the Apple gaming scene, is it? If enough Macintosh owners wrote in with requests of coverage for their format then the situation would change, but that's just not going to happen. Is it?

A couple of months ago my ageing PlayStation gave up the ghost and stopped loading discs. It was well out of warranty (being one of the first PAL machines in the country) but a quick call to Sony and a bill for £40 or so brought me a reconditioned replacement in return for my old machine within two days. Very impressive. A number of weeks after receiving my replacement, which is a SCPH-1002 (resplendent with audio ports), I noticed something very strange.

During a session on *Micro Machines V3* it occurred to me that the Gouraud shading was of a higher quality than I remembered.

I then tried the beach stage, which relies heavily on shading and used to look quite bad, with large bands of colour on the hills. Before my eyes a perfectly shaded landscape was being rendered!

At first I doubted my memory – how could the same disc give different results? But I asked a friend and he also remembered poorer quality graphics. The real clincher came when watching the FMV at the beginning, which showed graphics of a higher standard (where shading is concerned) than those on my previous machine. I wondered when I'd last played *Micro Machines* and sure enough I hadn't played it since I changed machines. So, has Sony introduced PlayStation 1.2? The only thing I can come up with is that the routines responsible for Gouraud shading have been updated in the newer machine. I would dearly love an explanation for this phenomenon.

On a similar vein, if it is possible to scale graphics quality in this way, and if Sony still intends to make PlayStation 2 backwards compatible (highly unlikely in my opinion), is there any reason why PlayStation 1 games could not be run on the new machine with bi- or trilinear filtered textures?

**Tony Pyle,**
**via email**

**Edge** hasn't heard of this before, and can't help but remain slightly dubious. It's true that Sony has updated the PlayStation's design since its introduction, but not in the fashion you suggest. An investigation is underway: report next month.

Many of us have been around the videogaming scene for the past ten years. We have witnessed the birth of 16bit and beyond. A lot of us have followed the games scene since its inception, and we are currently recruiting young games virgins every day. We have an online encyclopedia of information, as well as a plethora of magazine publications which no longer beat around the bush. If you don't understand phong shading or bilinear interpolation then you own an Amiga. So why is it that our famed broadcasting heritage, which invests millions per year reinventing itself, still cannot produce a videogames TV show which a) shows videogames for the majority of its air time, and b) is broadcast when people are awake?

Since the videogame culture matured about six years ago, we have been bombarded with utter trash, with MTV-style approaches and muppet presenters. The current excuse for a 'videogame TV show' can be seen on Sky TV (dot TV) called 'Game Over', and fits in between three very mature and highly informative computer shows, 15 minutes in duration each. 'Game Over' features an in-your-face (MTV) presenter and approach, with the usual upside-down camera angles and various sections. The content is abysmal. On one occasion, I timed the games content, and within a 15-minute show, videogames were shown for 4 minutes 16 seconds. The rest of the show was taken up with crap comic sketches totally unrelated to games.

If you don't have access to the Internet, you have to wait one month until the next issue of your favourite magazine. We need to petition the TV channels for a maturely produced and information TV magazine. A screen version of **Edge**, to be precise. I'd be interested to hear the thoughts of other readers.

**Lee Axon,**
**Newcastle upon Tyne**

There are developments happening in this area, in fact – look out for a feature on the topic here soon.

'Since the videogame culture matured about six years ago, we have been bombarded with **utter trash,** with MTV-style approaches and muppet presenters. The current excuse for a 'videogame TV show' can be seen on **Sky TV**'

I was reading a recent Testscreen section when I recalled one article in particular – Fair Game (**E**61) – in which it was argued that 5 and not 7 out of 10 is the average mark for a game, and that the industry is being mislead.

I thought this statement to be untrue, however, and decided to check, by calculating the average rating given to the games in a particular issue of your magazine. I found the mean (average) marks in **E**64 and **E**65 to be 7.2 and 7.4 out of 10 respectively, and that of the issue in the very argument was published turned out to be exactly 7! This is in total contradiction with your argument in the article.

You are right in saying that 5 is the midpoint of the marking scale, but I find that 7 is the realistic average mark, and a title scoring this would relatively be an average title. Is it that all games reviewed by **Edge** are above-average anyway? Or is it that reviewers err on the side of caution when reviewing games rather than give them a condemning under-average mark?

**Connor Treacy,**
**Co. Intrim, Northern Ireland**

What do you think the average score would be if **Edge** didn't spare you the boredom of reading about every single shoddy game released every month?

There simply isn't room to write about every piece of sub-par software here on a monthly basis. If that's what you want, then **Edge** really isn't the magazine for you.

While re-reading issue 58 of your fine publication, I noticed on the letters page a contribution from one Robin Jubber claiming to be 'the most anally retentive email ever'. The email pointed out **Edge**'s error in claiming that the initial ship in *Elite* was a Viper, and correctly stated that the Viper was of course the police ship. However, it went on to say that ship which launched Commander Jameson's trading career was the Cobra Mk II. This is where our friend Robin's claim falls to the ground.

As any true *Elite* fan will gladly point out, the actual ship which graced our Cub monitors was in fact a Cobra Mk III, as the Mk II was abandoned at the prototype stage. Who's not been reading their Space Trader's Flight Training Manual then? Oh, and if there's ever been a more anally retentive email than this, I'd love to see it.

**Ron Picnic,**
**via email**

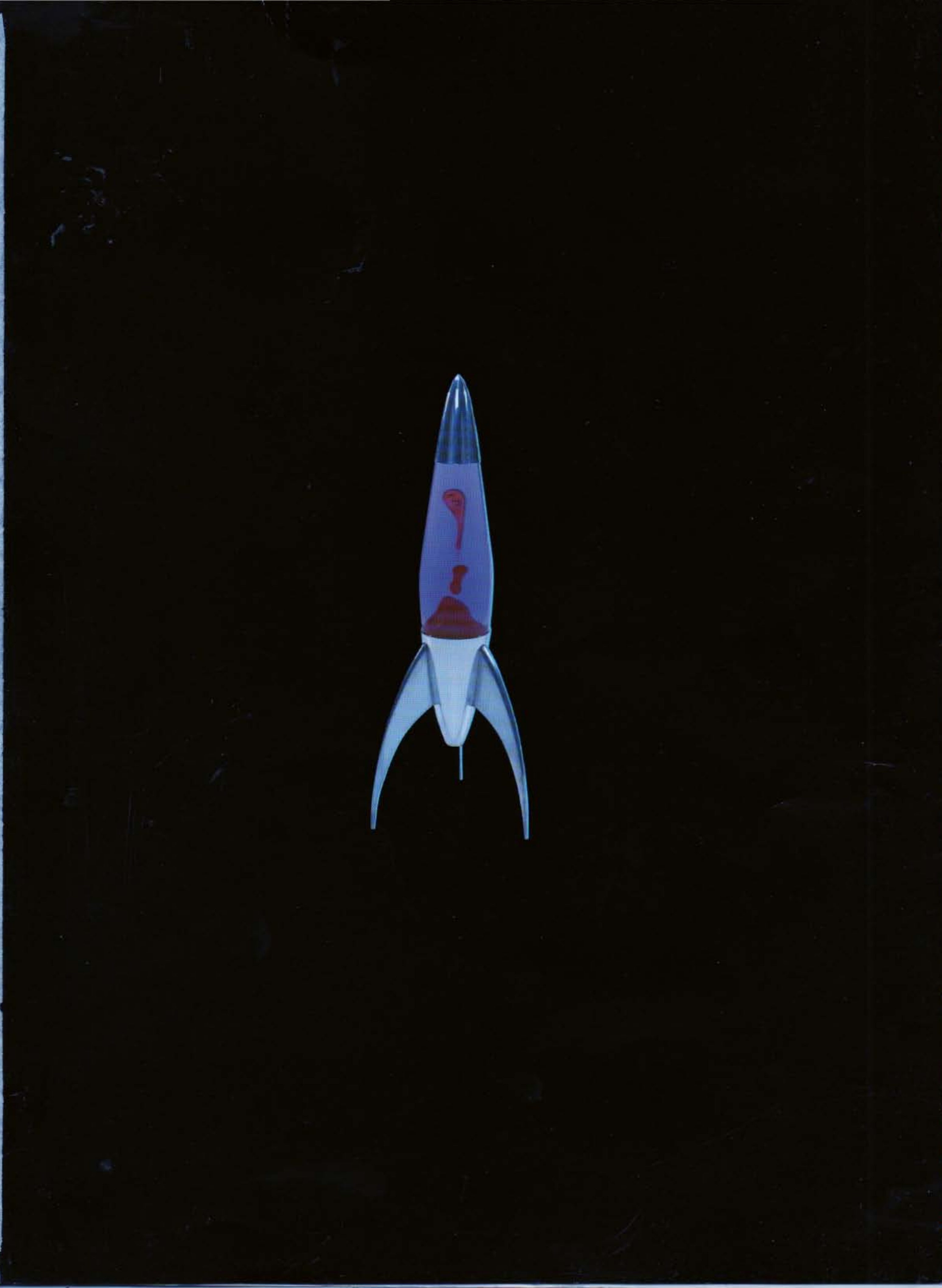
No, Ron, that does take the biscuit.

# 2

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